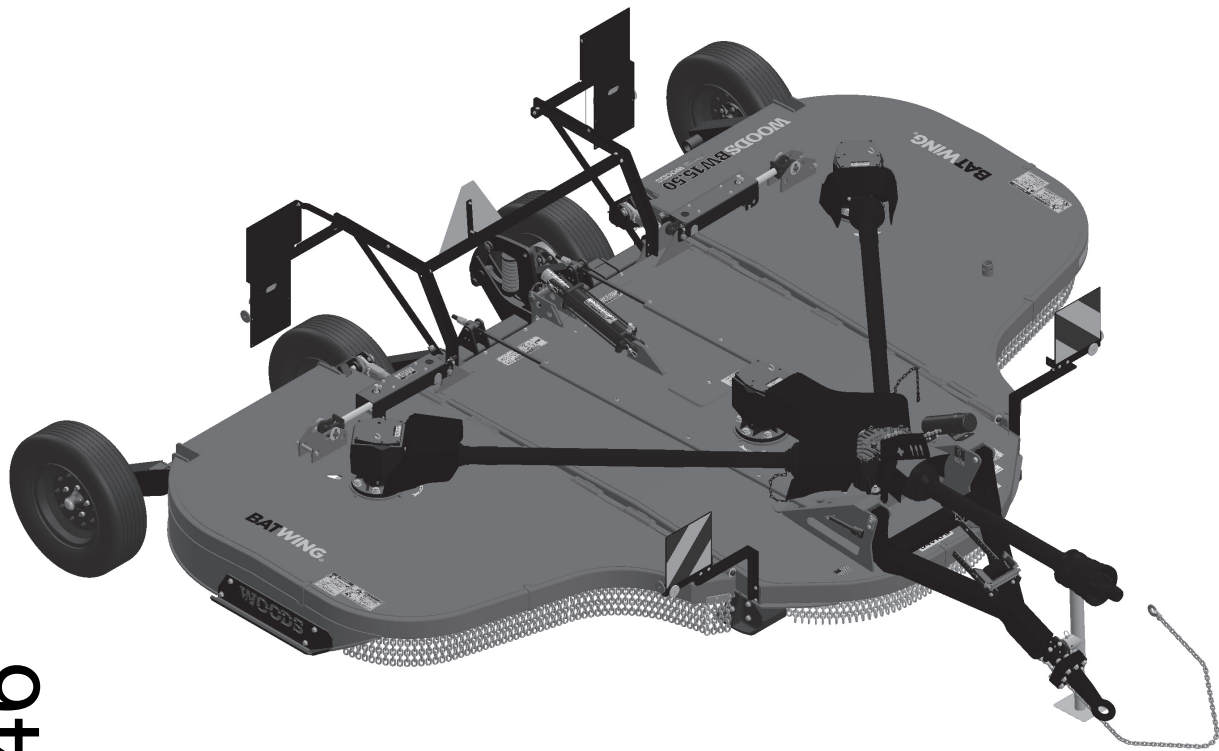


BATWING[®] ROTARY CUTTER

BW15.50E	BW15.60E	BW15.70E
BW15.50QE	BW15.60QE	BW15.70QE
BW10.50E	BW10.60E	BW10.70E
BW10.50QE	BW10.60QE	BW10.70QE



MAN1246
(06/01/2020)

WOODS[®]

OPERATOR'S MANUAL

TO THE DEALER:

Assembly and proper installation of this product is the responsibility of the Woods® dealer. Read manual instructions and safety rules. Make sure all items on the Dealer's Pre-Delivery and Delivery Check Lists in the Operator's Manual are completed before releasing equipment to the owner.

TO THE OWNER:

Read this manual before operating your Woods equipment. The Batwing® Rotary Cutter covered in this manual is designed to cut brush, shrubs, and grass as well as shred crops as specified in this manual. The information presented will prepare you to do a better and safer job. Keep this manual handy for ready reference. Require all operators to read this manual carefully and become acquainted with all the adjustment and operating procedures before attempting to operate. Replacement manuals can be obtained from your dealer. To locate your nearest dealer, check the Dealer Locator at www.WoodsEquipment.eu, or call +32 10 301111 in Belgium.

The equipment you have purchased has been carefully engineered and manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require cleaning and upkeep. Lubricate the unit as specified. Observe all safety information in this manual and safety decals on the equipment.

For service, your authorized Woods dealer has trained mechanics, genuine Woods service parts, and the necessary tools and equipment to handle all your needs.

Use only genuine Woods service parts. Substitute parts will void the warranty and may not meet standards required for safe and satisfactory operation. Record the model number and serial number of your equipment in the spaces provided:

Model: _____ **Date of Purchase:** _____

Serial Number: (see Safety Decal section for location) _____

Provide this information to your dealer to obtain correct repair parts.

Throughout this manual, the term **NOTICE** is used to indicate that failure to observe can cause damage to equipment. The terms **CAUTION**, **WARNING** and **DANGER** are used in conjunction with the Safety-Alert Symbol, (a triangle with an exclamation mark), to indicate the degree of hazard for items of personal safety.



This is the safety alert symbol. It is used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



Indicates a hazardous situation that, if not avoided, will result in death or serious injury.



Indicates a hazardous situation that, if not avoided, could result in death or serious injury.



Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

**IMPORTANT
or NOTICE**

Is used to address practices not related to physical injury.

NOTE

Indicates helpful information.

WOODS®

ALITEC™
CENTRAL FABRICATORS®
GANNON®
WAIN-ROY®
WOODS®

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This Owner's Manual should be regarded as part of the machine. Suppliers of both new and second-hand machines must make sure that this manual is provided with the machine.

SPECIFICATIONS

	BW15.50E / BW15.50QE BW15.60E / BW15.60QE BW15.70E / BW15.70QE	BW10.50E / BW10.50QE BW10.60E / BW10.60QE BW10.70E / BW10.70QE
Cutting Height (Varies with tire selection)	25 mm - 380 mm	25 mm - 380 mm
Cutting Width	4.5 m	3.2 m
Overall Width	4.8 m	3.5 m
Transport Width	2.4 m	2.3 m
Transport Height	2.1 - 2.7 m	2.1 - 2.7 m
Tractor HP	200	200
Tractor Min. PTO hp	45	45
Tractor PTO rpm	540/1000	540/1000
Blade Spindle	3	2
Blade Overlap	152 mm	152 mm
Number of Blades	6	4
Blade Rotation	Left Spindle: CW; Right & Center Spindles: CCW	
Blade Speed (meters per minute)	4572/4877	4572/4877
Wing Driveline	Cat 4	Cat 4
CV Driveline	Cat 6	Cat 6
Side Frame Thickness	6.4 mm	6.4 mm
Wheel Size	737 mm Max	
Torsion Protection	Slip Clutch	Slip Clutch

WEIGHT SPECIFICATIONS

Model No.	Weight (approximate kg.)	Tongue Weight (approximate kg.)
BW15.50E / 15.50QE	1970	545
BW15.60E / 15.60QE	2020	612
BW15.70E / 15.70QE	2195	667
BW10.50E / BW10.50QE	1875	545
BW10.60E / BW10.60QE	1948	612
BW10.70E / BW10.70QE	2116	667

GENERAL INFORMATION



■ Some illustrations in this manual show the equipment with safety shields removed to provide a better view. This equipment should never be operated with any necessary safety shielding removed.

The purpose of this manual is to assist you in operating and maintaining your cutter. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance. These instructions have been compiled from extensive field

experience and engineering data. Some information may be general in nature due to unknown and varying operating conditions. However, through experience and these instructions, you should be able to develop procedures suitable to your particular situation.

The illustrations and data used in this manual were current at the time of printing but, due to possible inline production changes, your machine may vary slightly in detail. We reserve the right to redesign and change the machines as may be necessary without notification.

Throughout this manual, references are made to right and left directions. These are determined by standing behind the equipment facing the direction of forward travel. Blade rotation is clockwise (left wing) and anticlockwise (right wing and centre section) as viewed from the top of the cutter.



SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by an operator's single careless act.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, judgement, and proper training of personnel involved in the operation, transport, maintenance, and storage of equipment.

It has been said, "The best safety device is an informed, careful operator." We ask you to be that kind of operator.

INSTALLATION

- Hydraulics must be connected as instructed in this manual. Do not substitute parts, modify, or connect in any other way.

TRAINING

- Safety instructions are important! Read all attachment and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals and safety decals are available from your dealer. To locate your nearest dealer, check the Dealer Locator at www.WoodsEquipment.eu, or call +32 10 301111 in Belgium.) Failure to follow instructions or safety rules can result in serious injury or death.
- If you do not understand any part of this manual and need assistance, see your dealer.
- Know your controls and how to stop engine and attachment quickly in an emergency.
- Operators must be instructed in and be capable of the safe operation of the equipment, its attachments, and all controls. Do not allow anyone to operate this equipment without proper instructions.
- Keep hands and body away from pressurized lines. Use paper or cardboard, not hands or other body parts to check for leaks. Wear safety goggles. Hydraulic fluid under pressure can easily penetrate skin and will cause serious injury or death.
- Make sure that all operating and service personnel know that if hydraulic fluid penetrates skin, it must be surgically removed as soon as possible by a doctor familiar with this form of injury or gangrene, serious injury, or death will result.

CONTACT A PHYSICIAN IMMEDIATELY IF FLUID ENTERS SKIN OR EYES. DO NOT DELAY.

- Never allow children or untrained persons to operate equipment.

PREPARATION

- Check that all hardware is properly installed. Always tighten to torque chart specifications unless instructed otherwise in this manual.
- Air in hydraulic systems can cause erratic operation and allows loads or equipment components to drop unexpectedly. When connecting equipment or hoses or performing any hydraulic maintenance, purge any air in hydraulic system by operating all hydraulic functions several times. Do this before putting into service or allowing anyone to approach the equipment.
- Make sure all hydraulic hoses, fittings, and valves are in good condition and not leaking before starting power unit or using equipment. Check and route hoses carefully to prevent damage. Hoses must not be twisted, bent sharply, kinked, frayed, pinched, or come into contact with any moving parts. Operate moveable components through full operational range to check clearances. Replace any damaged hoses immediately.
- After connecting hoses, check that all control lever positions function as instructed in the Operator's Manual. Do not put into service until control lever and equipment movements are correct.
- Set tractor hydraulic relief valve at 2500 psi (170 bars) (17,000 kPa) to prevent injury and equipment damage due to hydraulic system failure.
- Your dealer can supply original equipment hydraulic accessories and repair parts. Substitute parts may not meet original equipment specifications and may be dangerous.
- Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.
- Make sure attachment is properly secured, adjusted, and in good operating condition.

- Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.
- Make sure driveline guard tether chains are attached to the tractor and equipment as shown in the pamphlet that accompanies the driveline. Replace if damaged or broken. Check that driveline guards rotate freely on driveline before putting equipment into service.
- Before starting power unit, check all equipment driveline guards for damage. Replace any damaged guards. Make sure all guards rotate freely on all drivelines. If guards do not rotate freely on drivelines, repair and replace bearings before putting equipment into service.
- Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in "locked up" position at all times.
- Remove accumulated debris from this equipment, power unit, and engine to avoid fire hazard.
- Make sure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)
- Make sure shields and guards are properly installed and in good condition. Replace if damaged.
- Do not put this equipment into service unless all side skids are properly installed and in good condition. Replace if damaged.
- A minimum 20% of tractor and equipment weight must be on the tractor front wheels when attachments are in transport position. Without this weight, front tractor wheels could raise up resulting in loss of steering. The weight may be attained with front wheel weights, ballast in tires, front tractor weights or front loader. Weigh the tractor and equipment. Do not estimate.
- Inspect and clear area of stones, branches, or other hard objects that might be thrown, causing injury or damage.
- Connect PTO driveline directly to power unit PTO shaft. Never use adapter sleeves or adapter shafts. Adapters can cause driveline failures due to incorrect spline or incorrect operating length and can result in personal injury or death.

TRANSPORTATION

- Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in "locked up" position at all times.
- Always raise unit and install transport locks before transporting. Leak down or failure of mechanical or hydraulic system can cause equipment to drop.
- Always attach safety chain to tractor drawbar when transporting unit.
- Always comply with all state and local lighting and marking requirements.
- Never allow riders on power unit or attachment.
- Do not operate PTO during transport.
- Do not operate or transport on steep slopes.
- Do not operate or transport equipment while under the influence of alcohol or drugs.
- The maximum transport speed for towed and semi-mounted machines is 20 mph (32 km/h). Regardless of the maximum speed capability of the towing tractor, do not exceed the implement's maximum transport speed. Doing so could result in:
 - Loss of control of the implement and tractor
 - Reduced or no ability to stop during braking
 - Implement tire failure
 - Damage to the implement or its components.
- Use additional caution and reduce speed when under adverse surface conditions, turning, or on inclines.
- Never tow this implement with a motor vehicle.
- When transporting, pay special attention to overhead power lines and make sure the machine has sufficient clearance to pass.

OPERATION

- Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.
- Stay away from the machinery during a thunderstorm. Do not operate machine during a thunderstorm. If lightning from a thunderstorm strikes during



SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



operation, remain in the tractor cab. Do not make contact with the ground of objects outside the machine. Do not leave the cab until the storm has passed.

- Never walk, stand, or place yourself or others under a raised wing or in the path of a lowering wing. Hydraulic system leak-down, hydraulic system failures, mechanical failures, or movement of control levers can cause wings to drop unexpectedly and cause severe injury or death.
- Full chain shielding must be installed at all times. Thrown objects could injure people or damage property.
 - If the machine is not equipped with full chain shielding, operation must be stopped.
 - This shielding is designed to reduce the risk of thrown objects. The mower deck and protective devices cannot prevent all objects from escaping the blade enclosure in every mowing condition. It is possible for objects to ricochet and escape, traveling as much as 300 feet (92m).
- Never direct discharge toward people, animals, or property.
- Do not operate or transport equipment while under the influence of alcohol or drugs.
- Operate only in daylight or good artificial light.
- Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.
- Always comply with all state and local lighting and marking requirements.
- Never allow riders on power unit or attachment.
- Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in “locked up” position at all times.
- Always sit in power unit seat when operating controls or starting engine. Securely fasten seat belt, place transmission in neutral, engage brake, and ensure all other controls are disengaged before starting power unit engine.
- Operate tractor PTO at 540 RPM (1000 RPM on Q Series cutters). Do not exceed.
- Look down and to the rear and make sure area is clear before operating in reverse.
- Do not operate or transport on steep slopes.
- Do not stop, start, or change directions suddenly on slopes.
- Watch for hidden hazards on the terrain during operation.
- Do not handle blades with bare hands. Careless or improper handling may result in serious injury.
- Never go underneath equipment (lowered to the ground or raised) unless it is properly blocked and secured. Never place any part of the body underneath equipment or between movable parts even when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death. Follow Operator’s Manual instructions for working underneath and blocking requirements or have work done by a qualified dealer.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.
- Do not modify or alter or permit anyone else to modify or alter the equipment or any of its components in any way.
- To prevent contamination during maintenance and storage, clean and then cover hose ends, fittings, and hydraulic ports with tape.
- Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.
- Make certain all movement of equipment components has stopped before approaching for service.

- Frequently check blades. They should be sharp, free of nicks and cracks, and securely fastened.
- Your dealer can supply genuine replacement blades. Substitute blades may not meet original equipment specifications and may be dangerous.
- Tighten all bolts, nuts, and screws to torque chart specifications. Check that all cotter pins are installed securely to ensure equipment is in a safe condition before putting unit into service.
- Make sure all safety decals are installed. Replace if damaged, missing, or illegible. (See Safety Decals section for location.)
- Make sure shields and guards are properly installed and in good condition. Replace if damaged.

MAINTENANCE

- Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, set parking brake, remove key, inspect, and repair any damage before resuming operation.
- Your dealer can supply original equipment hydraulic accessories and repair parts. Substitute parts may not meet original equipment specifications and may be dangerous.
- Raise or lower wings slowly to prevent personal injury or damage to cutter.
- Continuous operation while the clutch is slipping could cause heat build-up resulting in fire. Adjust slip clutch pressure by tightening springs to the dimension shown in the “Owner Service” section. If clutch is set to minimum spring length, replace the friction disks as shown.
- Before dismounting power unit or performing any service or maintenance, follow these steps: disengage power to equipment, lower the 3-point hitch and all raised components to the ground, operate valve levers to release any hydraulic pressure, set parking brake, stop engine, remove key, and unfasten seat belt.
- Before cleaning, servicing, adjusting, repairing or unplugging, stop tractor engine, place all controls in neutral, set park brake, remove ignition key, and wait for all moving parts to stop.
- Never perform cleaning, servicing, or maintenance with engine running.
- Do not disconnect hydraulic lines until machine is securely blocked or placed in lowest position and system pressure is released by operating valve levers.
- Service and maintenance work not covered in OWNER SERVICE must be done by a qualified dealership. Special skills, tools, and safety procedures may be required. Failure to follow these instructions can result in serious injury or death.
- Explosive separation of tire and rim parts can cause serious injury or death. Release all air pressure before loosening bolts on wheel.

STORAGE

- Before disconnecting and storing, follow these instructions:
 - Store on level, solid ground.
 - Disconnect driveline and secure up off the ground.
 - Lower wings to ground.
 - Raise cutter center section and pin transport bar in raised position.
 - Attach parking jack and raise tongue weight off tractor drawbar.
 - Place wedge blocks at front and rear of wheels on center section and each wing to prevent wheel rotation.
 - Securely block all four corners of center section and each wing with jackstands.
 - Remove hydraulic hoses after tractor is turned off and all system pressure is released by operating valve levers several times.
 - Remove safety tow chain.
 - Remove retainer pin and high strength drawbar pin.
- Keep children and bystanders away from storage area.



SAFETY & INSTRUCTIONAL DECALS

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

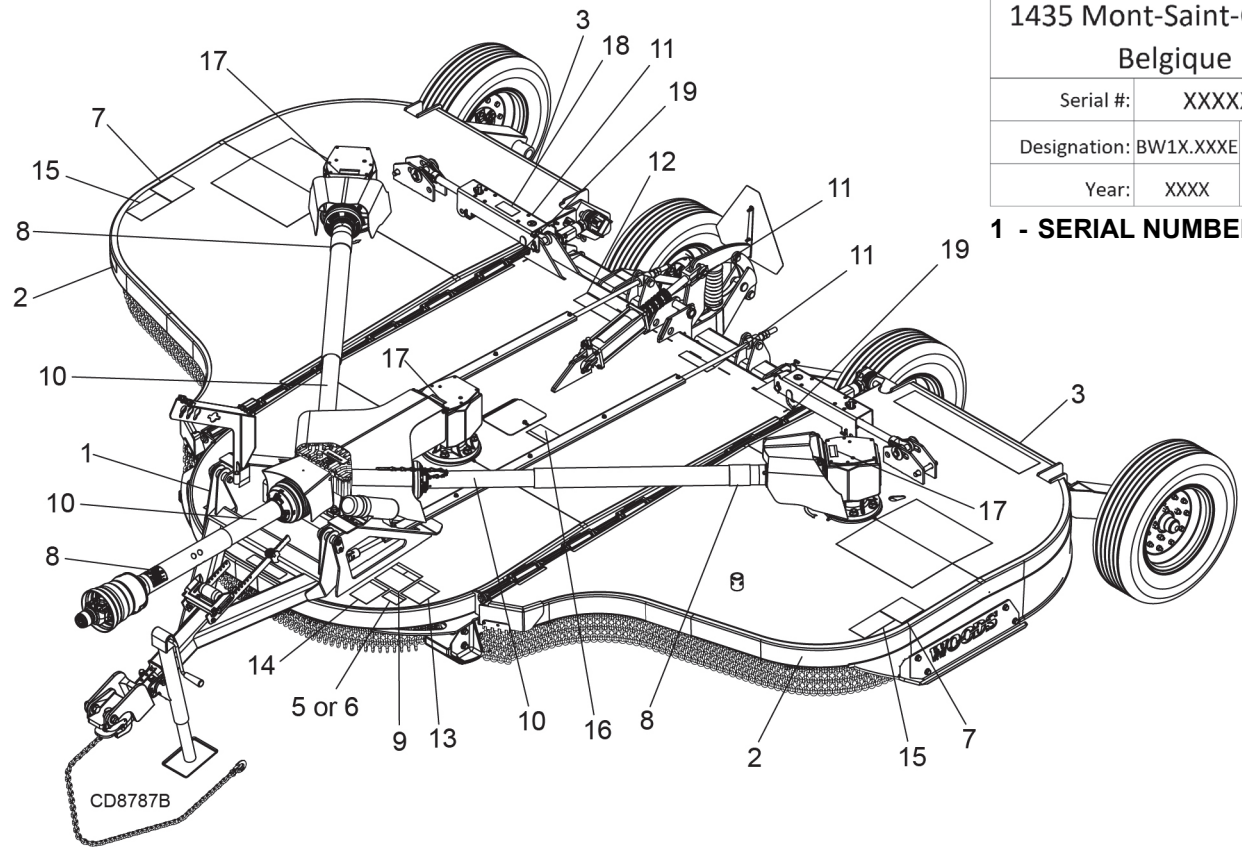
Replace Immediately If Damaged!



Blount Europe SA	
Rue Emile Francqui 5	
1435 Mont-Saint-Guibert	
Belgique	
Serial #:	XXXXXXXXXX
Designation:	BW1X.XXXE
Year:	XXXX



1 - SERIAL NUMBER PLATE



BE CAREFUL!

Use a clean, damp cloth to clean safety decals.

Avoid spraying too close to decals when using a pressure washer; high-pressure water can enter through very small scratches or under edges of decals causing them to peel or come off.

Replacement safety decals can be ordered free from your Woods dealer. To locate your nearest dealer, check the Dealer Locator at www.WoodsEquipment.eu, or call +32 10 301111 in Belgium.

2 - FRONT AMBER REFLECTOR (PN 1002940)

3 - REAR RED REFLECTOR (PN 57123)

SAFETY & INSTRUCTIONAL DECALS

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Replace Immediately If Damaged!



WARNING

DO NOT EXCEED PTO SPEED OF
1000 RPM
PTO speeds higher than 1000 RPM can cause equipment failure and personal injury.

15922

5 - PN 15922
(1000 RPM)

WARNING

DO NOT EXCEED PTO SPEED OF
540 RPM
PTO speeds higher than 540 RPM can cause equipment failure and personal injury.

18866

6 - PN 18866
(540 RPM)

OR

8 - PN 18864

DANGER



ROTATING DRIVELINE CONTACT CAN CAUSE DEATH
KEEP AWAY!

DO NOT OPERATE WITHOUT -

- All driveline guards, tractor and equipment shields in place.
- Drivelines securely attached at both ends.
- Driveline guards that turn freely on driveline.

18864

7 - PN 15503

DANGER



ROTATING BLADES AND THROWN OBJECTS


- Do not put hands or feet under or into mower when engine is running.
- Before mowing, clear area of objects that may be thrown by blade.
- Keep bystanders away.
- Keep guards in place and in good condition.

BLADE CONTACT OR THROWN OBJECTS CAN CAUSE SERIOUS INJURY OR DEATH.

15503

9 - PN 18865

WARNING



FALLING OFF CAN RESULT IN BEING RUN OVER.

- Tractor must be equipped with ROPS (or ROPS CAB) and seat belt. Keep foldable ROPS systems in "locked up" position at all times.
- Buckle Up! Keep seat belt securely fastened.
- Never allow riders on mower or tractor.

RAISED EQUIPMENT CAN DROP AND CRUSH.


- Before working underneath, follow all instructions and safety rules in operator's manual and securely block up all corners of equipment with jack stands.
- Securely blocking prevents equipment dropping from hydraulic leak-down, hydraulic system failures or mechanical component failures.

FALLING OFF OR FAILING TO BLOCK SECURELY CAN RESULT IN SERIOUS INJURY OR DEATH.

18865

11 - PN W19924

WARNING



HIGH-PRESSURE HYDRAULIC OIL LEAKS CAN PENETRATE SKIN RESULTING IN SERIOUS INJURY, GANGRENE OR DEATH.

- Check for leaks with cardboard; never use hand.
- Before loosening fittings: lower load, release pressure, and be sure oil is cool.

W19924

17 - PN 1004114

DANGER

If shaft connection is visible, shield is missing. Replace shield before operating equipment.

1004114



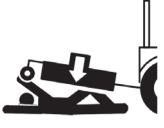
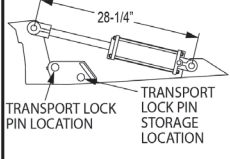
SAFETY & INSTRUCTIONAL DECALS

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Replace Immediately If Damaged!



12 - PN 1045604

	<h3 style="margin: 0;">⚠ WARNING</h3> <h4 style="margin: 5px 0;">RAISED IMPLEMENT CAN DROP AND CRUSH</h4> <ul style="list-style-type: none"> ■ Implement must be equipped with transport lock. ■ Before working underneath, transport lock must be in the raised position. All corners of implement must be securely blocked with jackstands. ■ All transport components must be functional, kept in good condition, and stored on equipment. ■ Blocking up prevents implement dropping from hydraulic leak down, hydraulic system failures, or mechanical component failures. <p style="text-align: center; margin: 0;">FAILURE TO FOLLOW INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.</p>	<p style="margin: 0;">TRANSPORT LOCK AND CYLINDER REQUIREMENTS</p> <p style="margin: 0;">SINGLE-ACTING FULL EXTENSION</p>  <p style="margin: 0; font-size: small;">28-1/4"</p> <p style="margin: 0; font-size: x-small;">TRANSPORT LOCK PIN LOCATION TRANSPORT LOCK PIN STORAGE LOCATION</p>
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10 - PN 33347

<h3 style="margin: 0;">⚠ DANGER</h3>

<p style="margin: 0;">GUARD MISSING. DO NOT OPERATE.</p>
<h3 style="margin: 0;">⚠ DANGER</h3>

<p style="margin: 0;">GUARD MISSING. DO NOT OPERATE.</p>
<h3 style="margin: 0;">⚠ DANGER</h3>

13 - PN 1003751

<h3 style="margin: 0;">⚠ WARNING</h3>

<p style="margin: 0;">CRUSHING AND PINCHING HAZARD</p> <ul style="list-style-type: none"> ■ Be extremely careful handling various parts of the machine. They are heavy and hands, fingers, feet, and other body parts could be crushed or pinched between tractor and implement. ■ Operate tractor controls from tractor seat only. ■ Do not stand between tractor and implement when tractor is in gear. ■ Make sure parking brake is engaged before going between tractor and implement. ■ Stand clear of machine while in operation or when it is being raised or lowered. <p style="text-align: center; margin: 0;">FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH.</p>

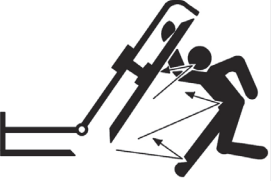

14 - PN 18877

<h3 style="margin: 0;">⚠ WARNING</h3>
<p style="margin: 0;">TO AVOID SERIOUS INJURY OR DEATH:</p> <ul style="list-style-type: none"> ■ Read Operator's Manual (available from dealer) and follow all safety precautions. ■ Keep all shields in place and in good condition. ■ Operate mower from tractor seat only. ■ Lower mower, stop engine and remove key before dismounting tractor. ■ Allow no children or untrained persons to operate equipment. ■ Do not transport towed or semi-mounted units over 20 mph. <p style="text-align: center; margin: 0;">FAILURE TO OPERATE SAFELY CAN RESULT IN INJURY OR DEATH.</p>

16 - PN 15502

<h3 style="margin: 0;">⚠ WARNING</h3>
<p style="margin: 0;">ROTATING COMPONENTS</p> <p style="margin: 0;">Do not operate without cover in place. Look and listen for rotation. Do not open cover until all components have stopped.</p> <p style="margin: 0;">CONTACT WITH ROTATING PARTS CAN CAUSE SERIOUS INJURY.</p>

15 - PN 18964

	<h3 style="margin: 0;">⚠ WARNING</h3>
	<p style="margin: 0;">RAISED WING EXPOSES BLADE AND INCREASES THROWN OBJECT HAZARDS.</p> <ul style="list-style-type: none"> ■ Only raise for transport. Stop cutter and lock wing(s) up. <p style="margin: 0;">RAISED WING CAN FALL AND CRUSH.</p> <ul style="list-style-type: none"> ■ Keep away. ■ Lock up with wing transport bars. ■ Lower wing(s) after transport and for storage <p style="text-align: center; margin: 0;">FAILURE TO FOLLOW INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.</p>

19 - PN 608235



Declaration of Conformity

Woods Equipment Company

2606 South Illinois Route 2
Post Office Box 1000
Oregon, Illinois 61061-1000
USA

EC Declaration of Conformity, conforming to EC Directive 2006/42/EC

We, Woods Equipment Company declare under our sole responsibility that the:


Product: BW15.50E / BW15.50QE / BW10.50E / BW10.50QE
Batwing Rotary Cutters

Manufactured by the above company, complies with the required provisions* of the **directive 2006/42/EC**.

Conforms also with the following European and International Standards:

- EN 953 Safety of Machinery—Guards
- EN 12965 PTO Drive Shafts and Their Guards—Safety
- ISO 4254-1 Agricultural Machinery—Safety—General
- ISO 12100:2010 Safety of Machinery—General Principles—Risk Assessment & Reduction
- ISO 13857 Safety of Machinery—Safety Distances to Prevent Hazard Zones Being Reached by the Upper and Lower Limbs

Also conforms with other National and International standards associated with its design and construction as listed in the **Technical File**.

Signed: 
Robert Dewey
(On behalf of Woods Equipment Co.)

Title: Vice President of Engineering

Date and Place of Declaration: July 2018, Oregon, Illinois, USA

*The following item must be performed by the authorized representative of Woods Equipment Company in the country in which the equipment is to be used:

1. A driveline that is CE certified must be supplied for connecting the cutter to the tractor.

Authorized Representative of Woods Equipment Company and person in the Community authorized to compile the Technical Construction File:

Alexis Michot
Blount Europe SA
Rue Emile Francqui 5 1435
MONT-SAINT-GUIBERT
Belgium

Declaration of Conformity

Woods Equipment Company

2606 South Illinois Route 2
Post Office Box 1000
Oregon, Illinois 61061-1000
USA

EC Declaration of Conformity, conforming to EC Directive 2006/42/EC

We, Woods Equipment Company declare under our sole responsibility that the:

Product: BW15.60E / BW15.60QE / BW10.60E / BW10.60QE
Batwing Rotary Cutters

Manufactured by the above company, complies with the required provisions* of the **directive 2006/42/EC**.

Conforms also with the following European and International Standards:

- EN 953 Safety of Machinery---Guards
- EN 12965 PTO Drive Shafts and Their Guards—Safety
- ISO 4254-1 Agricultural Machinery—Safety—General
- ISO 12100:2010 Safety of Machinery—General Principles—Risk Assessment & Reduction
- ISO 13857 Safety of Machinery—Safety Distances to Prevent Hazard Zones Being Reached by the Upper and Lower Limbs

Also conforms to other National and International standards associated with its design and construction as listed in the **Technical File**.

Signed:

Robert Dewey

Title: Vice President of Engineering

Date and Place of Declaration: July 2018, Oregon, Illinois, USA

*The following item must be performed by the authorized representative of Woods Equipment Company in the country in which the equipment is to be used:

1. A driveline that is CE certified must be supplied for connecting the cutter to the tractor.

Authorized Representative of Woods Equipment Company and person in the Community authorized to compile the Technical Construction File:

*Alexis Michot
Blount Europe SA
Rue Emile Francqui 5
1435 MONT-SAINT-GUIBERT
Belgium*

Declaration of Conformity

Woods Equipment Company

**2606 South Illinois Route 2
Post Office Box 1000
Oregon, Illinois 61061-1000
USA**

EC Declaration of Conformity, conforming to EC Directive 2006/42/EC

We, Woods Equipment Company declare under our sole responsibility that the:


**Product: BW15.70E / BW15.70QE / BW10.70E / BW10.70QE
Batwing Rotary Cutters**

Manufactured by the above company, complies with the required provisions* of the **directive 2006/42/EC**.

Conforms also with the following European and International Standards:

- EN 953 Safety of Machinery---Guards
- EN 12965 PTO Drive Shafts and Their Guards—Safety
- ISO 4254-1 Agricultural Machinery—Safety—General
- ISO 12100:2010 Safety of Machinery—General Principles—Risk Assessment & Reduction
- ISO 13857 Safety of Machinery—Safety Distances to Prevent Hazard Zones Being Reached by the Upper and Lower Limbs

Also conforms with other National and International standards associated with it's design and construction as listed in the **Technical File**.

Signed: 
Robert Dewey
(On behalf of Woods Equipment Co.)

Title: Vice President of Engineering

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OPERATION

The designed and tested safety of this machine depends on it being operated within the limitations as explained in this manual. Be familiar with and follow all safety rules in the manual, on the cutter and on the tractor.

The safe operation of this cutter is the responsibility of the operator, who must be properly trained. The operator should be familiar with the equipment and all safety practices before starting operation. Read the safety information on page 5 through page 9.

Recommended tractor ground speed for most conditions is from .6 - 3.7 km/h (1 - 6 mph).

Always operate tractor PTO at 540 RPM on BW15.50E, BW15.60E, BW15.70E, BW10.50E, BW10.60E, and BW10.70E. On BW15.50QE, BW15.60QE, BW15.70QE, BW10.50QE, BW10.60QE, and BW10.70QE operate PTO at 1,000 RPM.

DANGER

- Look down and to the rear and make sure area is clear before operating in reverse.
- Full chain shielding must be installed at all times. Thrown objects could injure people or damage property.
 - If the machine is not equipped with full chain shielding, operation must be stopped.
 - This shielding is designed to reduce the risk of thrown objects. The mower deck and protective devices cannot prevent all objects from escaping the blade enclosure in every mowing condition. It is possible for objects to ricochet and escape, traveling as much as 300 feet (92m).

WARNING

- Never allow children or untrained persons to operate equipment.
- Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.
- Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.

CAUTION

- Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.
- Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head. Wear a respirator or filter mask where appropriate.
- Stay away from the machinery during a thunderstorm. Do not operate machine during a thunderstorm. If lightning from a thunderstorm strikes during operation, remain in the tractor cab. Do not make contact with the ground or objects outside the machine. Do not leave the cab until the storm has passed.

CONNECTING CUTTER TO TRACTOR

NOTICE

- For tractors with a 35 mm diameter PTO shaft, the horizontal distance from the end of the tractor PTO shaft to the centre of drawbar pin should be 356 mm for 540 RPM cutter and 406 mm for the 1000 RPM cutters. This will minimize joint knock and damage to drive components.

Use of the CV Lift Assist System

The Batwing® cutter has a system to help lift and support the driveline while connecting and disconnecting it from the tractor. Follow the instructions below.

1. Remove klik pin.
2. Lift lever to vertical position which will lift driveline.
3. Connect coupler to tractor PTO shaft.
4. Lower lever and secure with klik pin.

If the driveline is held too high or low, the roller carriage can be adjusted by removing the mounting bolts, moving it to the preferred position, and replacing the bolts.

NOTICE

If the tractor used to power the Batwing® has a PTO shaft and drawbar closer than the current standards, the driveline could contact the lift assist frame or roller during use and could cause damage and failure to the driveline. When using a tractor of this type, the CV lift assist system should be removed from the tongue to avoid potential contact and damage.

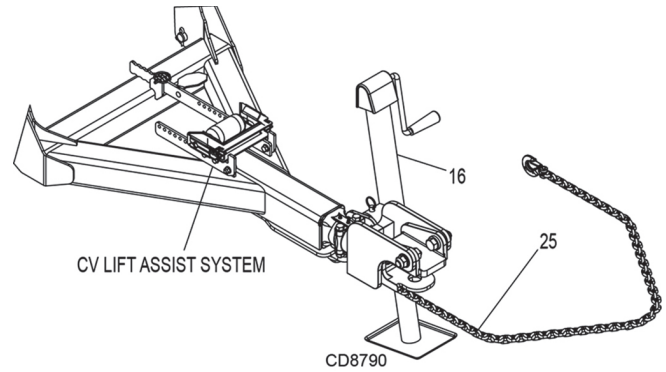


Figure 1. Cutter to Tractor Connection

Mechanical Connection

1. Remove unauthorized tow device by unlocking and removing specific device.
2. Attach cutter using appropriate towing eye hardware.
3. Attach safety tow chain (25) to drawbar support. Leave enough slack for turning.
4. Connect cutter driveline to tractor PTO shaft, making sure the spring-activated lock pin slides freely and is seated in tractor PTO splined groove.
5. Attach driveline shield tether chain to tractor drawbar to prevent rotation, if desired.
NOTE: CV driveline does not require a tether chain.
6. Loosen bolts in jack mount. Adjust jack so foot plate sits flat for storage. Tighten bolts.
7. Remove parking jack (16) from the tongue and attach it to the storage post on the front of the left wing.

Hydraulic Connection

1. Inspect hydraulic hoses to ensure they are in good condition.
2. Clean the fittings before connecting them to the tractor hydraulic ports.
3. Route the hose through the hose holder at the hitch and be sure the hose can slide freely in the holder. Do not allow hose slack to drag on the ground or become caught on tractor protrusions.
4. Attach the hydraulic hose to the tractor.
5. Raise unit with centre lift cylinder and extend wing cylinders. Stop tractor and remove transport lock pins from wing stops and transport stop as shown in Figure 2 & Figure 3, page 15.
6. From the operator position, start tractor and raise and lower deck several times to purge trapped air from the hydraulic cylinder.

Interference Check

1. Be sure that tractor 3-point lift links do not interfere with hydraulic hoses, cutter driveline, or cutter frame.
2. Check for straight-ahead operation and at full turning angles. If there is any interference, remove the lower lift links.
3. Contact between tractor lift links and cutter parts can cause damage, especially when turning.

CV Driveline Turning Limits

NOTICE

- You must not exceed a turning angle of 80 degrees at the head of the Constant Velocity driveline or damage will occur.

NOTE: Remove CV drive shipping bracket before operation and discard. This bracket is only supplied on factory assembled units with a CV drive installed.

1. To check for potential excessive turn angle, disconnect the driveline from tractor.
2. Start engine and turn as far right or left as possible.
3. Shut engine off and try to connect CV driveline to tractor. If it cannot be connected, the turn angle is too severe.
4. Restart engine and straighten angle slightly, shut off engine and try to connect CV driveline to tractor.
5. Repeat the process until the driveline can be connected. The point at which the driveline can be connected is the maximum turn that should be made.

Cutting Height Adjustment

NOTICE

- Avoid ground contact with blades. Striking ground with blades produces one of the most damaging shock loads a cutter can encounter. If this occurs repeatedly, the cutter, driveline, and gearboxes will be damaged.

Cutting height range is from 25 mm to 381 mm. A hydraulic cylinder is used for cutting height adjustment.

When selecting a cutting height, you should consider the area of operation. If the ground is rolling and has mounds the blades could contact, set the cutting height accordingly. The cutting height (blade edge) is approximately 25 mm above the bottom of the side skid.

Cutting Height (Normal Mowing) - Centre Section

1. Position the cutter on a hard level surface and select an approximate cutting height, for example 150 mm.
2. Raise wings and lock them in the UP position.
3. Raise or lower the centre section to obtain a distance of 127 mm from bottom edge of skid shoe to the ground.
4. Loosen jam nuts on the attitude rod that runs from the wheel yoke to the tongue.
5. Adjust rod in or out until the rear of the cutter is approximately 12 mm higher than the front.
6. Tighten jam nuts against sleeve.

Cutting Height (Normal Mowing) - Wings

1. Lower wings to normal mowing position.
2. Loosen the jam nut on the adjustable link (turn buckle).
3. Lengthening the link will raise the wing, shortening the link will lower the wing. The rear edge of the wing should be parallel to the ground.

When using the cutter to shred, the rear of the cutter deck should be approximately 12 mm to 25 mm lower than the front.

TRACTOR OPERATION

Use care when operating around tree limbs and other low objects. Avoid being knocked off tractor and being injured.

Only use a tractor with a Roll Over Protection Structure (ROPS) and seat belt. Securely fasten seat belt.

The cutter is operated with tractor controls. Engage the PTO at a low rpm to prevent excessive loads on the cutter drive system. Increase throttle to recommended PTO operating RPM.

Be sure operator is familiar with all controls and can stop tractor and cutter quickly in an emergency. The operator should give complete, undivided attention to operating tractor and cutter.

CUTTER OPERATION

When beginning operation of the cutter, make sure that all persons are in a safe location.

Power for operating the cutter is supplied by the tractor PTO. Operate PTO at 540 RPM(1000 RPM for "Q" models).

Know how to stop the tractor and cutter quickly in an emergency.

To stop cutter when operating under normal conditions, reduce tractor RPM to idle and disengage PTO to reduce freewheeling on cutting elements.

Engage PTO at a low engine RPM to minimize stress on the drive system and gearbox.

With PTO engaged, raise PTO speed to 540 RPM (1000 RPM for "Q" models) and maintain throughout cutting operation.

Gearbox protection is provided by a slip clutch with replacement fiber disc. The slip clutch is designed to slip when excessive torsional loads occur.

Move slowly into material. Adjust tractor ground speed to provide a clean cut without lugging the tractor engine.

Use a slow ground speed for better shredding.

Proper ground speed will depend on the terrain and the material's height, type, and density.

Normally, ground speed will range from 3 to 8 km/h. Tall, dense material should be cut at a low speed; thin, medium-height material can be cut at a faster ground speed.

Always operate tractor PTO at proper RPM (540 or 1000 depending on model) to maintain blade speed and to produce a clean cut.

Under certain conditions tractor tires may roll down some grass and prevent cutting at the same height as the surrounding area. When this occurs, reduce your ground speed but maintain PTO at 540 or 1000 RPM. The lower ground speed will permit grass to rebound partially.

Mowing Tips

 **WARNING**

- Look down and to the rear and make sure area is clear before operating in reverse.
- Do not operate or transport on steep slopes.
- Do not stop, start, or change directions suddenly on slopes.
- Use extreme care and reduce ground speed on slopes and rough terrain.
- Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in "locked up" position at all times.

 **CAUTION**

Maximum recommended ground speed for cutting or shredding is 10 km/h (6.2 miles per hour). Adjust tractor ground speed by using higher or lower gears to provide a clean cut without lugging tractor engine.

Tall material should be cut twice. Cut material higher the first pass. Cut at desired height at 90 degrees the second pass.

Remember, sharp blades produce cleaner cuts and use less power.

Before entering an area, analyze it to determine the best procedure. Consider the height and type of material to be cut and the terrain type (hilly, level or rough, etc.).

Shredding

The cutter may be used to shred various crops including green manure, straw, stubble, asparagus residue, corn stalks and similar crops in preparation for tilling. It may also be used to shred pruning in orchards, groves and vineyards.

Each shredding operation may require a different set-up. Start with front edge of cutter high. Adjust up or down as necessary with attitude rod. Experiment until you obtain the results you want.

When shredding attitude is set, check that the distance from the bottom rear edge of the wing to the ground matches the bottom edge of the rear centre section to the ground.

TRANSPORTING

 **WARNING**

- Watch for hidden hazards on the terrain during operation.
- Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.
- Always raise unit and install transport locks before transporting. Leak down or failure of mechanical or hydraulic system can cause equipment to drop.
- Always attach safety chain to tractor drawbar when transporting unit.
- Never exceed 32.2 km/h (20 mph) during transport.
- Never allow riders on power unit or attachment.
- Do not operate PTO during transport.
- Do not operate or transport on steep slopes.
- Never allow children or untrained persons to operate equipment.
- Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.
- Make sure spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.
- Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.
- Do not operate or transport equipment while under the influence of alcohol or drugs.
- When transporting, pay special attention to overhead power lines and make sure the machine has sufficient clearance to pass.

 **CAUTION**

- Always comply with all state and local lighting and marking requirements.

Lock-Up

Always transport with wings and centre frame in the raised, locked position.

Wing Lock-Up

1. Raise wing to the up position.
2. Remove klik pin and lock pin from storage position.
3. Place lock pin in lock position and secure with klik pin.
4. Repeat steps 1 to 3 for opposite wing.
5. Lower cylinder against lock-up bars (Figure 2).

Centre Section Lock-Up for 3m < Transport

1. Raise cutter with hydraulic cylinder to maximum height.
2. Install 152mm of stroke control kit as shown.
3. Lower cutter against stops and confirm cylinder length is 660mm long and maximum transport width is less than three meters (Figure 3).

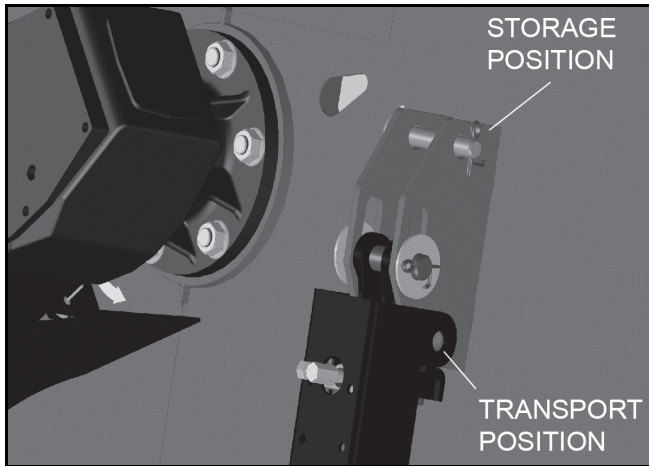


Figure 2. Transport Lock Pin

Centre Section Lock-Up

1. Raise cutter with hydraulic cylinder to maximum height.
2. Remove klik pin and lock pin from storage position (Figure 3).

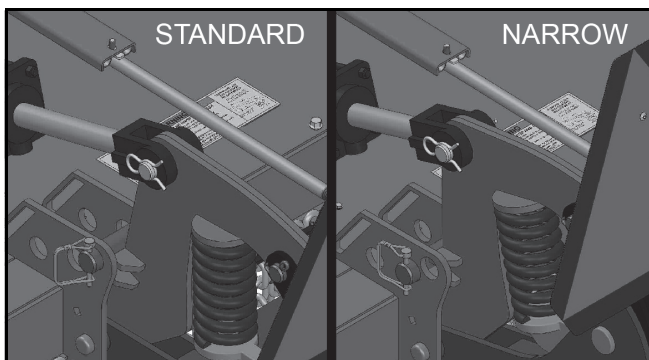


Figure 3. Transport Lock Pin in Standard & Narrow Width Positions

3. Place lock pin and klik pin in lock position and lower cutter against lock pin.
4. For 3m width transport, place lock pin in narrow transport position.
5. To lower cutter for operation, extend hydraulic cylinder to raise cutter. Move lock pin from lock position to storage position (Figure 4).
6. Lower cutter to desired cutting height.

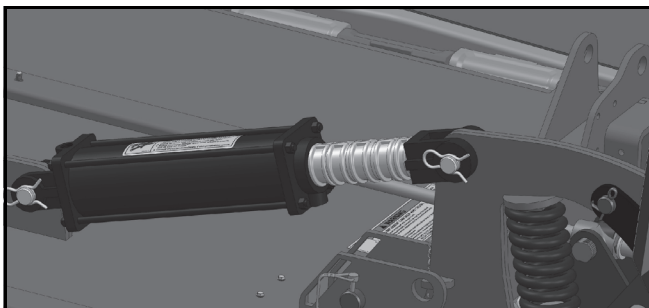


Figure 4. Transport Lock Pin In Operation Position

JACKING UNIT DURING TRANSPORTATION

1. Shut off tow vehicle in safe location, place tow vehicle in park, and apply parking brake.
2. Place jack device under rear centre frame rail at decal #19 location. (Refer to pages 7 through 9 of Safety information for decal and placement.)
3. Only jack unit up high enough to repair wheel or tire assembly.

STORAGE

Follow these steps when storing your cutter:

1. Clean cutter before storing. See page 18 for cleaning instructions. Store on level, solid ground.
2. Disconnect driveline and secure up off the ground.
3. Lower wings to ground.
4. Raise cutter centre section and pin transport bar in raised position.
5. Attach parking jack and raise tongue weight off tractor drawbar.
6. Place wedge blocks at front and rear of wheels on centre section and each wing to prevent wheel rotation.
7. Securely block all four corners of centre section and each wing with jack stands.
8. Remove hydraulic hoses after tractor is turned off and all system pressure is released by operating valve levers several times.
9. Remove safety tow chain.
10. Remove retainer pin and high strength drawbar pin.
11. Install unauthorized towing device lock onto towing eye or ball coupler.
 - To install in towing eye, insert supplied device through towing eye and affix with supplied lock.
 - To install in ball coupler, open device and insert lower portion in ball coupler. Close device. Attach supplied padlock.
12. Keep children and bystanders away from storage area.

PRE-OPERATION CHECK LIST

(OWNER'S RESPONSIBILITY BEFORE EACH USE)

- Review and follow all safety rules and safety decal instructions on page 5 through page 9.
- Check that all safety decals are installed and in good condition. Replace if damaged, missing, or illegible.
- Check that equipment is properly and securely attached to tractor.
- Make sure driveline spring-activated locking pin or collar slides freely and is seated firmly in tractor PTO spline groove.
- Check all lubrication points and grease as instructed in lubrication information. Make sure the PTO slip joint is lubricated and that the gearbox fluid levels are correct.
- Set tractor PTO at correct RPM for your equipment.
- Lubricate all grease fitting locations. Make sure PTO shaft slip joint is lubricated.
- Check that all hydraulic hoses and fittings are in good condition and not leaking before starting tractor. Check that hoses are not twisted, bent sharply, kinked, frayed, or pulled tight. Replace any damaged hoses immediately.
- Check that all hardware is properly installed and secured.
- Check cutting height and attitude adjustment.
- Raise and lower equipment to make sure air is purged from hydraulic cylinders and hoses. Raise and lower equipment to make sure air is purged from hydraulic cylinders and hoses.
- Check that blades are sharp and secure and cutting edge is positioned to lead in an anticlockwise rotation for centre and right wings, and clockwise for left wing.
- Make sure tractor ROPS or ROPS cab and seat belt are in good condition. Keep seat belt securely fastened during operation.
- Check that shields and guards are properly installed and in good condition. Replace if damaged.
- Before starting engine, operator must be in tractor seat with seat belt fastened. Place transmission in neutral or park, engage brake and disengage tractor PTO.
- Inspect area to be cut and remove stones, branches, or other hard objects that might be thrown and cause injury or damage.
- Inspect rubber or chain shielding and replace any damaged rubber shield or missing links.
- Make sure tractor 3-point lift links do not interfere with hydraulic hoses or driveline throughout full turning range.

OWNER SERVICE

The information in this section is written for operators who possess basic mechanical skills. If you need help, your dealer has trained service technicians available. For your protection, read and follow the safety information in this manual.

WARNING

- Keep all persons away from operator control area while performing adjustments, service, or maintenance.
- Before working underneath, disconnect driveline from tractor, lower wings to ground, raise cutter, and pin transport bar in raised position. Attach parking jack and lower to ground. Securely block all four corners of centre section and each wing with jack stands. Blocking up prevents the cutter from dropping due to hydraulic leak down, hydraulic system failure, or mechanical component failure.
- Service and maintenance work not covered in OWNER SERVICE must be done by a qualified dealership. Special skills, tools, and safety procedures may be required. Failure to follow these instructions can result in serious injury or death.
- Never perform cleaning, servicing, or maintenance with engine running.
- Before cleaning, servicing, adjusting, repairing or unplugging, stop tractor engine, place all controls in neutral, set park brake, remove ignition key, and wait for all moving parts to stop.

CAUTION

- If you do not understand any part of this manual and need assistance, see your dealer.
- Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

BLOCKING METHOD

To minimize the potential hazards of working underneath the cutter, follow these procedures:

WARNING

- Before performing any service or maintenance, lower equipment to ground or block securely, turn off engine, remove key, and disconnect driveline from tractor PTO.
- Never go underneath equipment (lowered to the ground or raised) unless it is properly blocked and secured. Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death. Follow Operator's Manual instructions for working underneath and blocking requirements or have work done by a qualified dealer.
- Before working underneath, read manual instructions, securely block up, and check stability. Secure blocking prevents equipment from dropping due to hydraulic leak down, hydraulic system failure, or mechanical component failure.

Do not position jackstands under wheels, axles, or wheel supports. Components can rotate and cause cutter to fall.

1. Jackstands with a load rating of 450 kg or more are the only approved blocking device for this cutter. Install jackstands (shown by Xs in Figure 5) under the cutter before working underneath unit.
2. Consider the overall stability of the blocked unit. Just placing jackstands underneath will not ensure your safety.
3. The working surface must be level and solid to support the weight on the jackstands. Make sure jackstands are stable, both top and bottom. Make sure cutter is approximately level.
4. With full cutter weight lowered onto jackstands, test blocking stability before working underneath.
5. If cutter is attached to tractor when blocking, set the brakes, remove key, and block cutter before working underneath.
6. Securely block rear tractor wheels, in front and behind.

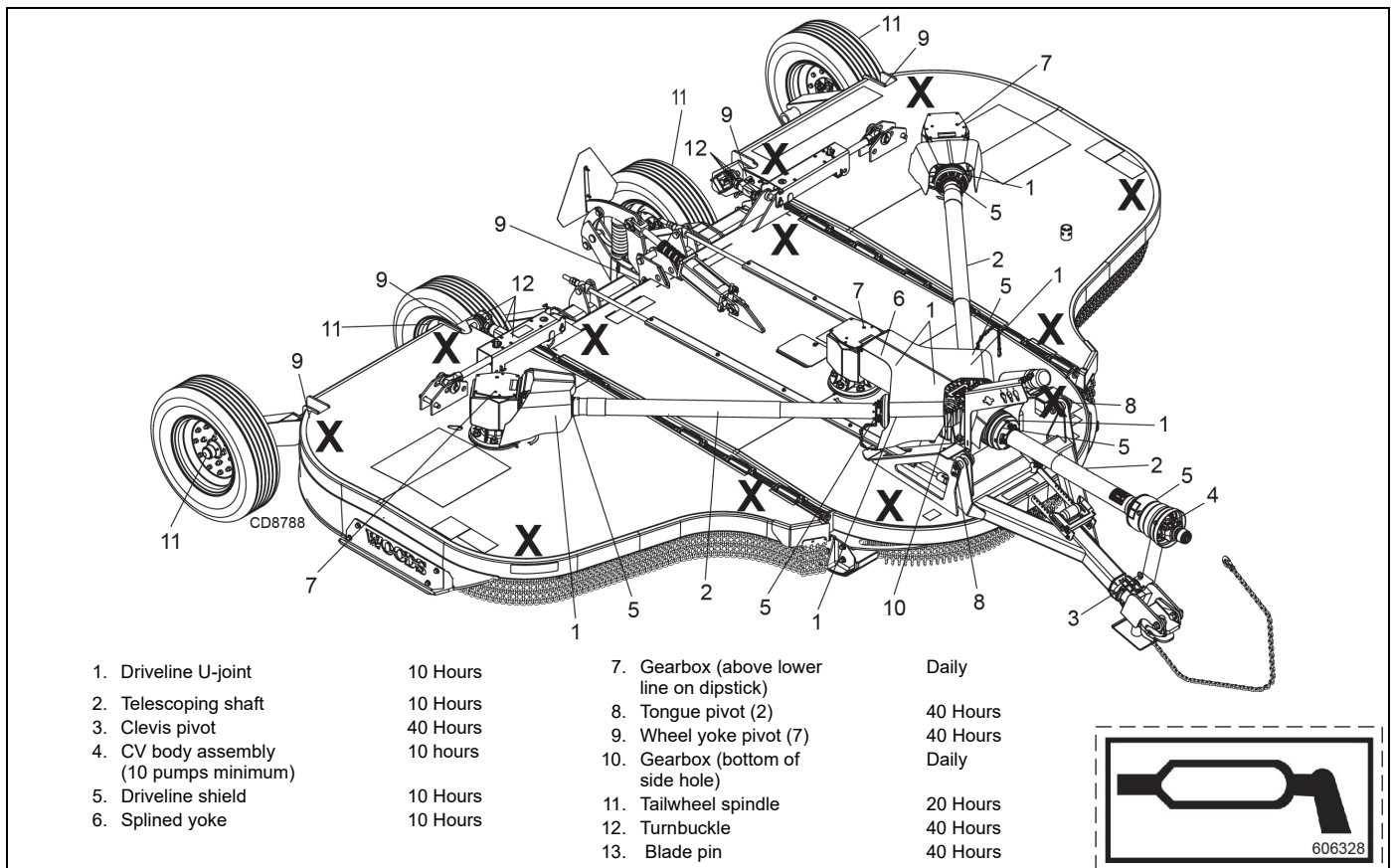


Figure 5. Jackstand Placement and Lubrication Points

LUBRICATION

Do not let excess grease collect on or around parts, particularly when operating in sandy areas.

See Figure 5 for lubrication points and frequency or lubrication based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication.

Use a lithium grease of #2 consistency with a MOLY (molybdenum disulfide) additive for all locations unless otherwise noted. Be sure to clean fittings thoroughly before attaching grease gun. One good pump of most guns is sufficient when the lubrication schedule is followed.

Gearbox Lubrication

For gearbox, use a high quality gear oil with a viscosity index of 80W or 90W and an API service rating of GL-4 or -5 in gearboxes. Fill gearbox until oil is above lower line on dipstick. Check gearbox oil level daily for evidence of leakage, and contact your dealer if leakage occurs. Check vent plug periodically and clean if it does not relieve pressure.

Driveline Lubrication

1. Lubricate the driveline slip joint every eight operating hours. Failure to maintain proper lubrication could result in damage to U-joints, gearbox, and driveline.
2. Lower cutter to ground, disconnect driveline from tractor PTO shaft, and slide halves apart but do not disconnect from each other.
3. Apply a bead of grease completely around male half where it meets female half. Slide drive halves over each other several times to distribute grease.

Seasonal Lubrication

In addition to the daily recommended lubrication, a more extensive application is recommended seasonally.

1. Fill CV double yokes with 20 pumps of grease with the joints in a straight line.
2. Articulate CV body to maximum angle several times to ensure full coverage of joints.
3. Place joints in the straight position and add 10 additional pumps of grease to both joints.
4. Wipe telescoping drive clean of all old grease and contaminants.
5. Add a thin layer of new grease over telescoping drive.

BLADES

WARNING

■ Your dealer can supply genuine replacement blades. Substitute blades may not meet original equipment specifications and may be dangerous.

Blade Removal (Figure 6)

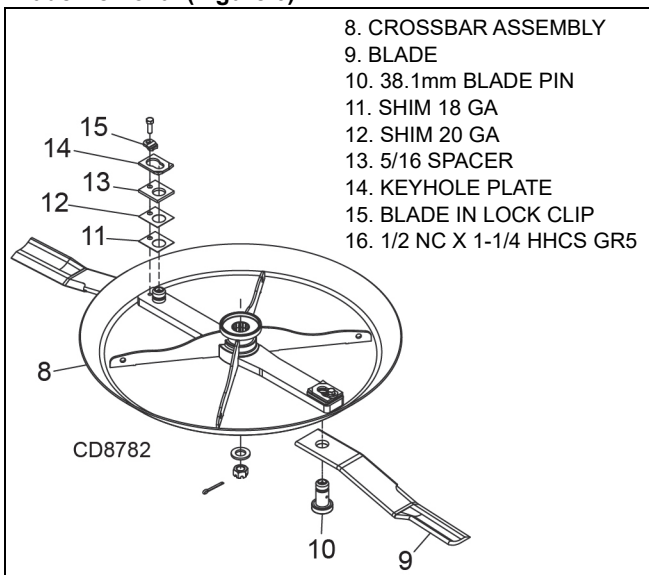


Figure 6. Blade Assembly

1. Disconnect driveline from tractor PTO.
2. Raise cutter and block securely (see Figure 5).
3. Align crossbar (8) with blade access hole in the cutter frame. Remove cap screw (16), blade pin lock clip (15), keyhole plate (14), spacer (13), and shims (11 & 12). Carefully drive blade pin (10) out of crossbar.
4. Rotate crossbar and repeat for opposite blade.

NOTICE

■ If blade pin (10) is seized in crossbar and extreme force will be needed to remove it, support crossbar from below to prevent gearbox damage.

Blade Installation (Figure 6)

CAUTION

- Service and maintenance work not covered in OWNER SERVICE must be done by a qualified dealership. Special skills, tools, and safety procedures may be required. Failure to follow these instructions can result in serious injury or death.
- Before servicing, adjusting, repairing or unplugging, stop tractor engine, place all controls in neutral, set park brake, remove ignition key, and wait for all moving parts to stop.
- Never perform service or maintenance with engine running.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.
- Before working underneath, disconnect driveline from tractor, lower wings to ground, raise cutter, and pin transport bar in raised position. Attach parking jack and lower to ground. Securely block all four corners of centre section and each wing with jack stands. Blocking up prevents the cutter from dropping due to hydraulic leak down, hydraulic system failure, or mechanical component failure.
- If you do not understand any part of this manual and need assistance, see your dealer.
- Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

NOTICE

■ Crossbar rotation has clockwise rotation on left gearbox and anti-clockwise rotation on the right and centre gearboxes when looking down on cutter. Be sure to install blade cutting edge to lead in correct rotation.

NOTE: Always replace or sharpen both blades at the same time.

1. Inspect blade pin (10) for nicks or gouges, and if you find any replace the blade pin.
2. Insert blade pin through the blade. Blade should swivel on blade pin; if it doesn't, determine the cause and correct.
3. Align crossbar (8) with blade access hole in cutter frame. Make sure blade offset is down away from cutter.
4. Insert blade pin (10) through blade. Push blade pin through crossbar.
5. Install shims (11 & 12) and spacer (13) over blade pin.

NOTE: Only use enough shims to allow keyhole plate (14) to slide into blade pin groove.

1. Install blade clip (15) over keyhole plate and into blade pin groove.
2. Secure into position with cap screw (16). Torque cap screw to 115 Nm.
3. Grease pin via zerk at end of pin.
4. Repeat steps for opposite side.

NOTE: Blade should be snug but should swivel on pin without having to exert excessive force. Blade should not move more than a 6 mm up or down at the tip. Keep any spacers not used in the installation as replacements or for future installation.

Blade Sharpening

NOTICE

■ When sharpening blades, grind the same amount on each blade to maintain balance. Replace blades in pairs. Unbalanced blades will cause excessive vibration, which can damage gearbox bearings. Vibration may also cause structural cracks to cutter.

1. Sharpen both blades at the same time to maintain balance. Follow original sharpening pattern.
2. Do not sharpen blade to a razor edge—leave at least a 1.6 mm blunt edge.
3. Do not sharpen back side of blade.

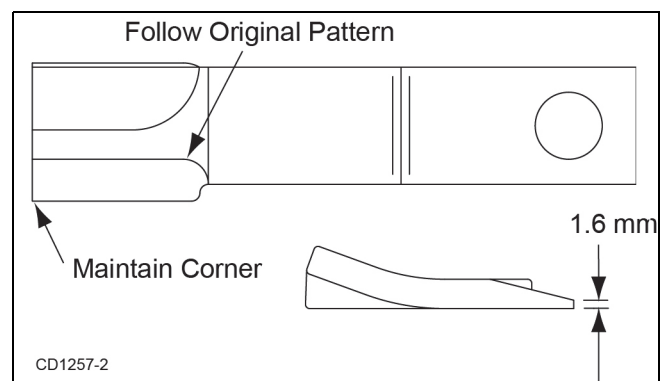


Figure 7. Blade Sharpening

2 - PLATE SLIP CLUTCH ADJUSTMENT (FIGURE 8)

The slip clutch is designed to slip so that the gearbox and driveline are protected if the cutter strikes an obstruction.

A new slip clutch or one that has been in storage over the winter may seize. Before operating the cutter, make sure it will slip by performing the following operation:

1. Turn off tractor engine and remove key.
2. Remove driveline from tractor PTO.
3. Loosen six 10 mm cap screws (6) to remove all tension from Belleville spring plate (5).
4. Hold clutch hub (3) solid and turn shaft to make sure clutch slips.
5. If clutch does not slip freely, disassemble and clean the thrust plate faces (4), flange yoke (1), and clutch hub (3).
6. Reassemble clutch.
7. Tighten Belleville spring (5) until it is against the thrust plate (4) of the clutch, and then back off each of the six nuts by 2 full revolutions. The gap between Belleville spring and thrust plate should be 3.2 mm as shown in Figure 8.
8. If a clutch continues to slip when the spring is compressed to 3.2 mm gap, check friction discs (2) for excessive wear. Discs are 3.2 mm when new. Replace discs after 1.6 mm wear. Minimum disc thickness is 1.6 mm.

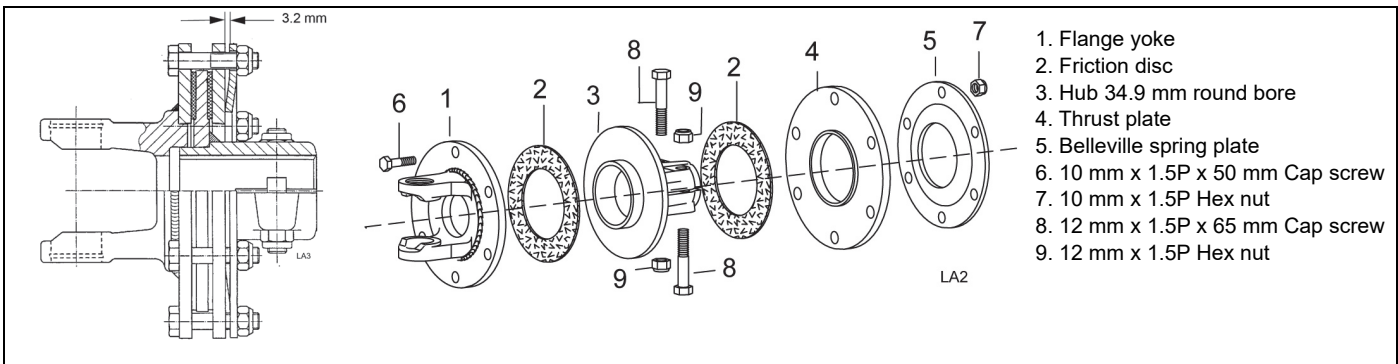


Figure 8. Slip Clutch Assembly (.50E & .60E Series Models)

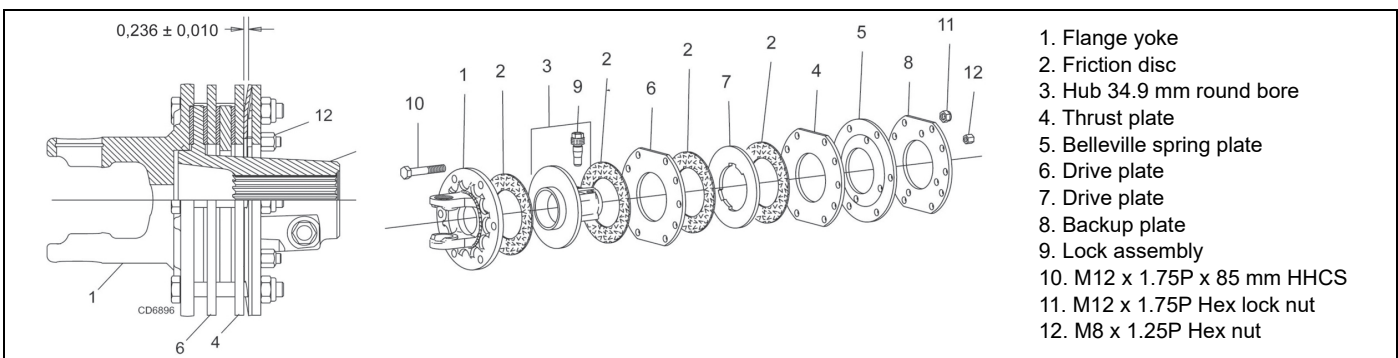


Figure 9. Slip Clutch Assembly (.70E Series Models)

! DANGER

SHIELDING REPAIR

■ Full chain shielding must be installed at all times. Thrown objects could injure people or damage property.

- If the machine is not equipped with full chain shielding, operation must be stopped.
- This shielding is designed to reduce the risk of thrown objects. The mower deck and protective devices cannot prevent all objects from escaping the blade enclosure in every mowing condition. It is possible for objects to ricochet and escape, traveling as much as 300 feet (92m).

Repairing Chain Shielding

1. Inspect chain shielding each day of operation and replace any broken or missing chains as required.
2. Replace any missing hardware.

CLEANING

! WARNING

- Never perform cleaning, servicing, or maintenance with engine running.
- Before cleaning, servicing, adjusting, repairing or unplugging: stop tractor engine, place all controls in neutral, set park brake, remove ignition key, and wait for all moving parts to stop.

After Each Use

- Remove large debris such as clumps of dirt, grass, crop residue, etc. from machine.
- Inspect machine and replace worn or damaged parts.
- Replace any safety decals that are missing or not readable.
- Do not climb on machines or ladder to clean. Clean machine with wings in lowered position only.

Periodically or Before Extended Storage

- Clean large debris such as clumps of dirt, grass, crop residue, etc. from machine.
- Remove the remainder using a low-pressure water spray.
 1. Be careful when spraying near scratched or torn safety decals or near edges of decals as water spray can peel decal off surface.
 2. Be careful when spraying near chipped or scratched paint as water spray can lift paint.
 3. If a pressure washer is used, follow the advice of the pressure washer manufacturer.
- Inspect machine and replace worn or damaged parts.
- Sand down scratches and the edges of areas of missing paint and coat with Woods spray paint of matching colour (purchase from your Woods dealer).
- Replace any safety decals that are missing or not readable (supplied free by your Woods dealer). See Safety Decals section for location drawing.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Does not cut	Dull blades Worn or broken blades Incorrect PTO speed Ground speed too fast Drive not functioning (blades do not turn when PTO is running) Gearbox malfunction Excessive clutch slippage Incorrect blade direction	Sharpen blades. Replace blades. (Replace in pairs only.) Set at rated PTO speed. Reduce ground speed. Check drive shaft connection. Check gearbox. Repair gearbox. Adjust clutch. Check to be sure blade edge is correct for direction of rotation.
Streaks or ragged cut	Broken or worn blades Attitude incorrect Ground speed too fast Excessive cutting height Excessive lush and tall vegetation	Replace or sharpen blades. Level machine. Reduce ground speed. Lower cutting height. (Note: Set height so blades do not frequently hit ground.) Re-cut at 90° to first pass.
Excessive side skid wear	Running with skids continuously on ground	Raise cutting height or adjust.
Excessive clutch slippage	Clutch out of adjustment Clutch discs worn; wear stops contacting opposite plate Blades hitting ground	Adjust clutch. Replace discs. Raise cutting height.
Vibration	Broken blade Bearing failure Hitch length incorrect Universal drive	Replace blades in pairs. Check gearbox shafts for side play. Reset hitch length. Adjust pedestal bearing height to be parallel to ground.
Blades hitting deck	Bent blades or crossbar	Replace bent blades or crossbar.
Unit will not raise	Low oil	Add hydraulic oil.
Unit doesn't cut level	Wing section cuts lower than centre Wing section cuts higher than centre	Lengthen turnbuckle connecting centre yoke to wing wheel yoke. Shorten turnbuckle connecting centre yoke to wing wheel yoke.

DEALER SERVICE

The information in this section is written for dealer service personnel. The repair described here requires special skills and tools. If your shop is not properly equipped or your mechanics are not properly trained in this type of repair, you may be time and money ahead to replace complete assemblies.

WARNING

■ Before working underneath, read manual instructions, securely block up, and check stability. Secure blocking prevents equipment from dropping due to hydraulic leak down, hydraulic system failure, or mechanical component failure.

■ Keep all persons away from operator control area while performing adjustments, service, or maintenance.

■ Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

CAUTION



■ Explosive separation of tire and rim parts can cause serious injury or death. Release all air pressure before loosening bolts.

GEARBOX MAINTENANCE

NOTE: Read this entire section before starting any repair. Many steps are dependent on each other.

1. Fill gearbox with SAE 80W or 90W gear lube. Proper oil level is between lowest ring and end of dipstick.

NOTE: Repair to this gearbox is limited to replacing bearings, seals, and gaskets. Replacing gears, shafts, and a housing is not cost effective. Purchasing a complete gearbox is more economical.

2. Inspect gearbox for leakage and bad bearings. Leakage is a very serious problem and must be corrected immediately.

NOTE: Bearing failure is indicated by excessive noise and side-to-side or end-play in gear shafts.

Seal Replacement (Figure 10)

Recommended sealant for gearbox repair is Permatex® Aviation 3D Form-A-Gasket or equivalent.

Leakage can occur at the vertical or horizontal gaskets and shaft seals.

Leakage at the horizontal gasket or seal can be repaired without removing the gearbox from the cutter.

Seal Installation

NOTE: Proper seal installation is important. An improperly installed seal will leak.

1. Clean area in housing where seal outer diameter (OD) seats. Apply a thin coat of Permatex.
2. Inspect area of shaft where seal seats. Remove any burrs or nicks with an emery cloth.
3. Lubricate gear shaft and seal lips.
4. Place seal squarely on housing, spring-loaded lip toward housing. Select a piece of pipe or tubing with an OD that will sit on the outside edge of the seal but will clear the housing. Tubing with an OD that is too small will bow seal cage and ruin seal.

5. Carefully press seal into housing, avoiding distortion to the metal seal cage.

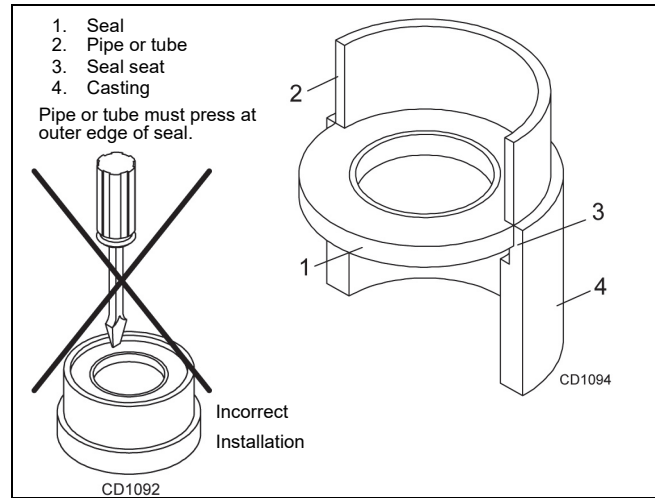


Figure 10. Seal Installation

Vertical Shaft Seal Replacement (Figure 11)

1. Disconnect and remove the rear driveline from the gearbox.
2. Remove drain plug and drain gear lube from housing. Replace plug when empty.
3. Remove crossbar (see page 23).
4. Remove protective seal (8) and vertical shaft seal (18). Replace seal (18) with new seal.
5. Vertical seal should be recessed in housing. Horizontal seal (19) should be pressed flush with outside of housing.
NOTE: Distortion to seal cage or damage to seal lip will cause seal to leak.
6. Fill gearbox with SAE 80W or 90W gear lube until it runs out the level plug.
7. Remove and replace any seal damaged in installation.

Horizontal Shaft Seal Replacement (Figure 11)

1. Disconnect and remove the rear driveline from the gearbox.
2. Remove drain plug and drain gear lube from housing. Replace plug when empty.
3. If the leak occurred at either end of horizontal shaft, remove oil cap (20) and/or oil seal (19). Replace with new one.
4. Fill gearbox with SAE 80W or 90W gear lube to proper level.

GEARBOX REPAIR

Removal from Cutter (Figure 11)

NOTE: Gearbox is heavy: do not attempt to move without mechanical assistance.

1. Disconnect and remove the rear driveline from the gearbox.
2. Remove cotter pin and nut from vertical shaft and remove crossbar (see page 23).
3. Remove the six bolts that attach gearbox to cutter and remove gearbox.

Disassembly (Figure 11)

1. Remove top cover (22) from gearbox and pour out gear oil.
2. Remove oil cap (20) (to be replaced).
3. Remove snap ring (10) and shim (13) from input shaft (3).
4. Support gearbox in hand press and push on input shaft (3) to remove bearing (7).
5. Remove six cap screws (23) and top cover (22) from housing. Remove gear (1) from inside housing.
6. Remove oil seal (19) from front of housing (to be replaced).
7. Remove snap ring (10) and shim (13) from front of housing (2).
8. Remove input bearing (7) by using a punch and hammer from outside of housing.
9. Support housing in vise in a horizontal position.
10. The castle nut (15), cotter pin (25), and hub are already removed with the stump jumper/crossbar. Remove the protective seal (8), and oil seal (18).
11. Remove cotter pin (9), castle nut (14), and shim (17) from output shaft (4).
12. Remove output shaft (4) by using a punch and hammer and tap on top to drive down. Remove gear (5) and shim (16) from inside housing.
13. Remove bottom bearing (26) by using a punch and hammer from the top, outside the housing.
14. Support housing upside down (top cover surface) and remove bottom bearing (6) by using a punch and hammer from the bottom side of the housing.

15. Inspect gears for broken teeth and wear. Some wear is normal and will show on loaded side. Forged gear surfaces are rough when new. Check that wear pattern is smooth.
16. Inspect vertical and horizontal shafts for grooves, nicks, or bumps in the areas where the seals seat. Resurface any damage with emery cloth.
17. Inspect housing and caps for cracks or other damage.

Assembly (Figure 11)

1. Clean housing, paying specific attention to areas where gaskets will be installed.
2. Wash housing and all components thoroughly. Select a clean area for gearbox assembly. Replace all seals, bearings, and gaskets. All parts must be clean and lightly oiled before reassembling.
3. Insert both output bearings (6) in the housing, using a round tube of the correct diameter and a hand press.
4. Slide output shaft (4) through both bearings (6) until it rests against top bearing (6).
5. Slide shim (16) over output shaft (4).
6. Press gear (5) onto output shaft (4) and secure with shim (17), castle nut (14), and cotter pin (9).
7. Apply grease to lower seal lips (18) and press seal (18) over output shaft (4), using a tube of the correct diameter. Be sure not to damage the seal lip.
8. Press in housing so that seal is recessed. Press protective seal (8) until seated flush with housing. Verify that the seal (8) is seated correctly.
9. Press bearing (7) into the housing, using a round tube of the correct diameter and a hand press. Secure with shim (13) and snap ring (10).
10. Secure snap ring (11) on input shaft (3) if not already secure.
11. Place gear (1) through top of housing and align gear (1) and gear (5) so that gear teeth are a match.

12. While holding gear (1) in place, slide input shaft (3) through gear (1) and bearing (7). Align splines on shaft (3) and gear (1).
13. Slide shim (12) over input shaft (3) and press bearing (7) onto input shaft (3), using a round tube of the correct diameter and a hand press.
14. Slide shim (13) over input shaft (3) and secure with snap ring (10).
15. Check input shaft end float by moving the input shaft (3) by hand. If end float is higher than .30 mm (0.012"), insert shim between input shaft (3) and rear bearing (7). Repeat until end float is less than .30 mm (0.012"). Check rotational torque by hand. The torque should be less than .25 Nm (2.2 lbs-inch).
16. Check that the gear backlash is between .15 Nm (0.006") and .41 Nm (0.016"). You should not have to adjust the backlash.
17. Press in input oil seal (19), using tube of correct diameter. Be careful not to damage seal lip.
18. Press oil cap (20) on to cover the rear of housing, using a tube of the correct diameter.
19. Place top cover (22) on top of housing and secure with six cap screw (23).
20. Check gearbox housing for leaks by plugging all holes except one. Apply 27.6 kPa (4 psi) compressed air and immerse the gearbox in water to verify that there are no leaks.
21. Remove gearbox from water and dry off with compressed air. Add SAE 80W or 90W EP oil to proper level. Tighten all plugs.

Reinstallation

NOTE: Gearbox is heavy: do not attempt to move without mechanical assistance.

1. Set gearbox on cutter and fasten with bolts and nuts. Torque bolts to 407 Nm (300 lbs-ft).
2. Attach crossbar (Crossbar Installation, page 24).

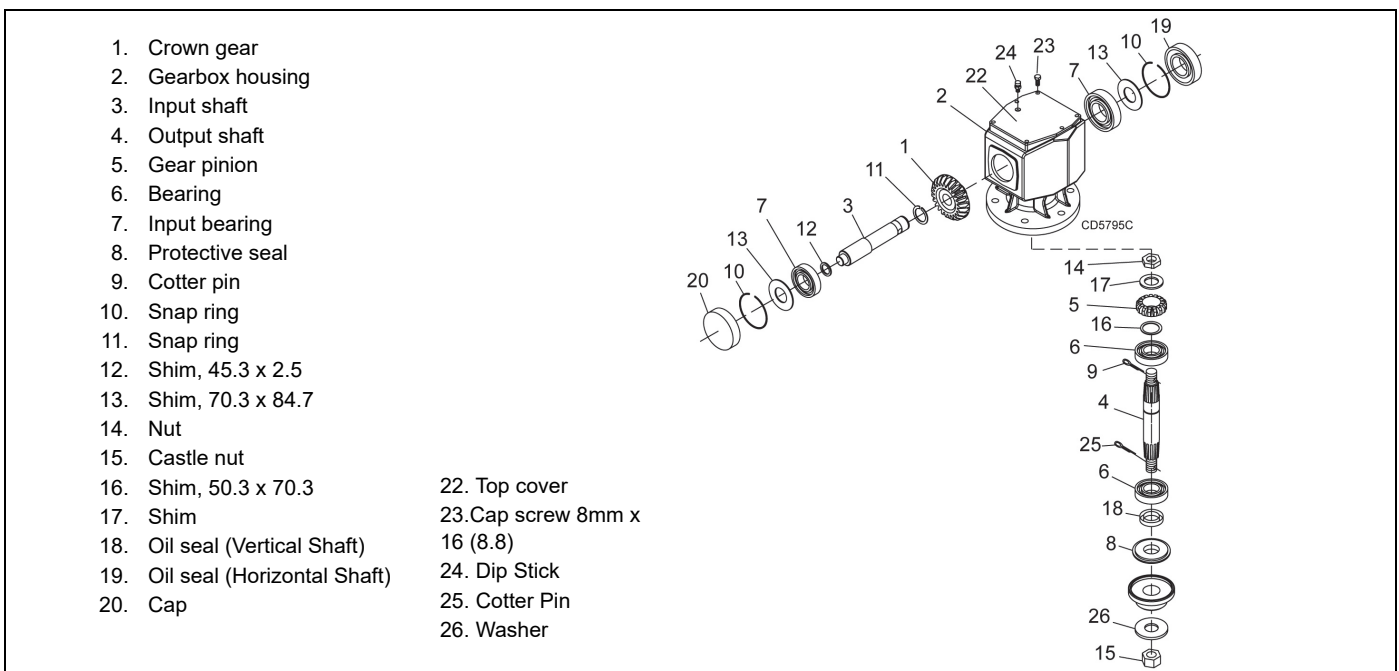


Figure 11. Gearbox

SPLITTER GEARBOX REPAIR (Figure 12)

Removal from Cutter

1. Disconnect and remove all drivelines from gearbox.
2. Remove the four cap screw and lock washers that secure gearbox to cutter, and remove gearbox.

NOTE: Gearbox is heavy: do not attempt to move it without mechanical assistance.

Disassembly

Centre Shaft

1. Remove plug from side of gearbox and pour out the gear oil.
2. Remove seal (11, to be replaced) from the front and rear of the centre shaft (14).
3. Remove snap ring (10) and shim (12) from the front and rear of the centre shaft (14).
4. Support gearbox in a hand press and push on the rear of the centre shaft.
5. Remove bearing (13) from centre shaft (14).
6. Remove six cap screws (20) and top cover (21) from the gearbox housing.
7. Remove gear (17) and bearing (16).
8. Snap ring (15) does not have to be removed from shaft (14) unless it is damaged.

Side Shaft

9. Remove seal (2, to be replaced) from the output shaft (1).
10. Remove snap ring (4) and shim (8) from output shaft (1).
11. Support gearbox in hand press. Using a punch through the front opening of the gearbox and, push shaft (1) and bearing (5) out the backside of housing.
12. Remove gear (6) from inside housing.
13. Remove bearing (7) and shim (8) by using a hammer and punch through front opening of the gearbox and force them out the backside of the housing.
14. Repeat steps 7 through 11 for opposite side shaft.

Inspect Components

15. Inspect gears for broken teeth and wear. Some wear is normal and will show on the loaded side of the teeth. Forged gear surfaces are rough when new. Check that wear pattern is smooth.
16. Inspect shafts for grooves, nicks, or bumps in the areas where seals seat. Resurface any damage with emery cloth or replace shaft.
17. Inspect housing and caps for cracks or other damage.

Assembly

1. Clean housing, pay specific attention to areas where gaskets are installed.
2. Wash housing and all components thoroughly.
3. Select a clean work area to assemble gearbox.

4. Replace all seals, bearings, and gaskets.
5. All parts must be clean and lightly oiled before assembly.

Side Shaft

6. Insert bearing (7) and shim (8) in housing using a round tube of the same size diameter and a hand press.
7. Place gear (6) inside the housing and slide output shaft (1) through gear (6) and into bearing (7).
8. Slide bearing (5) and shim (8) over output shaft. Secure with snap ring (4).
9. Check end play of shaft by moving it in and out. If end play is more than .30 mm (0.012"), insert another shim (8) between snap ring and bearing. Repeat process until end play is less than .30 mm (0.012").
10. Check rotational torque. Torque should be less than .25 Nm (2.2 lbs-inch) gear.
11. Place seal (2) over shaft and press into housing using a tube of the same diameter. Seal should be flush with housing when properly installed.
12. Repeat steps 6 through 10 for opposite side shaft.

Centre Shaft

13. Place gear (17) inside housing and slide centre shaft (14) through the gear from the front of the housing.
14. Slide bearings (16 & 13) and shims (12) over each end of the centre shaft (14). Secure bearings into position using snap rings (10).
15. Check end play of shaft by moving it in and out. If end play is more than .30 mm (0.012"), insert another shim (12) between snap ring and bearing. Repeat process until end play is less than .30 mm (0.012").

16. Check rotational torque. Torque should be less than .25 Nm (2.2 lbs-inch) gear.
17. Check gear backlash, backlash should be between .15 mm to .41 mm (0.006" to 0.016"). You should not have to adjust for backlash.
18. Place seal (11) over shaft and press into housing using a tube of the same diameter. Seal should be flush with housing when properly installed. Repeat process for opposite end shaft.

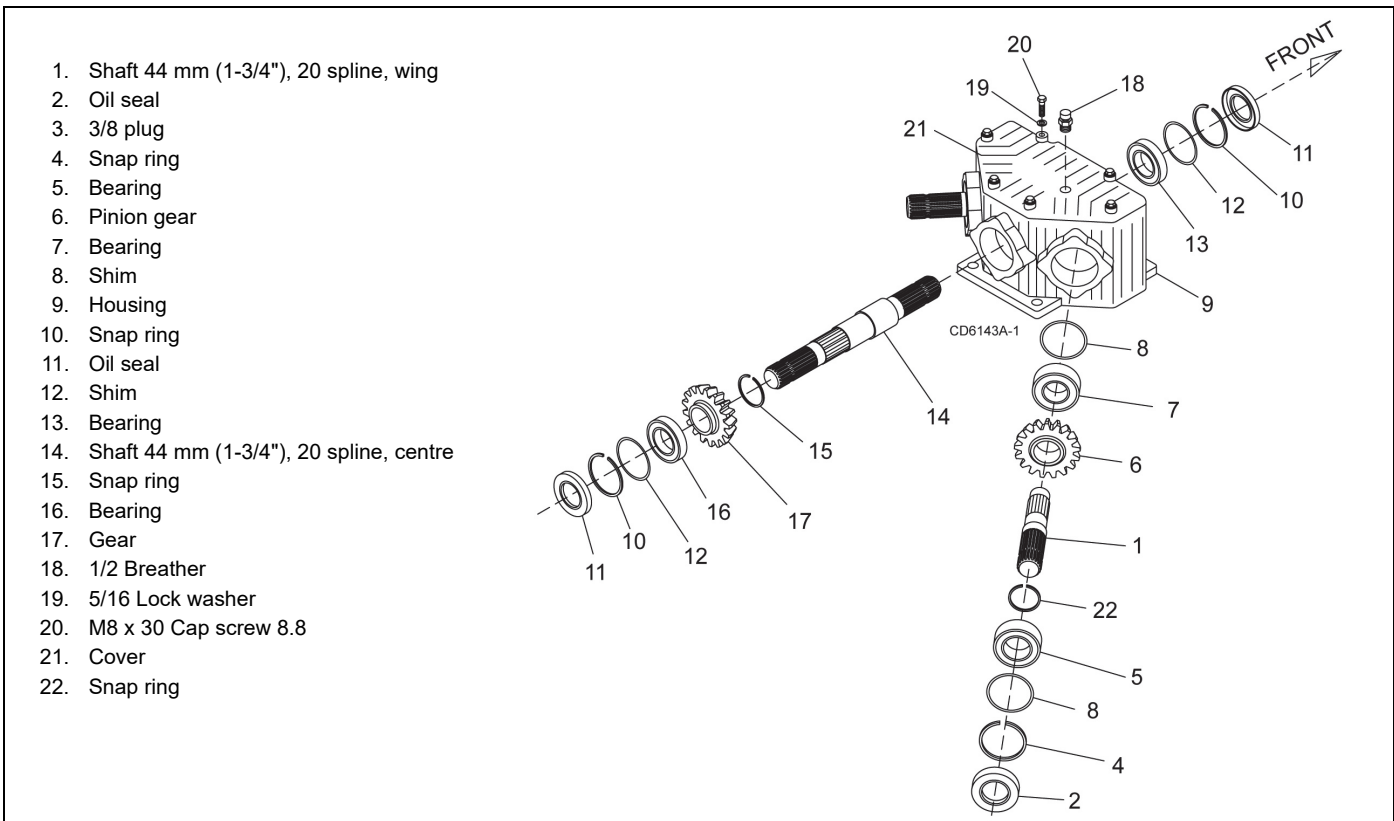
Check Gearbox

1. Place top cover (21) on housing and secure into position using six cap screws (20).
2. Check gearbox for leaks by: plugging all holes except one, applying 27.6 kPa (4 psi) of compressed air, and immersing gearbox in water. Verify gearbox does not leak.
NOTE: Excessive air pressure will damage seals.
3. Remove gearbox from water and dry off.
4. Remove upper plug (3) on right side of housing. Add SAE 80W or 90W EP oil until it runs out side level hole. Replace plug.
5. Install breather (18) in top cover.

Reinstallation on Cutter

NOTE: Gearbox is heavy: do not attempt to move it without mechanical assistance.

1. Place gearbox on cutter and secure into position using four cap screws and lock washers.
2. Torque hardware to 407 Nm (300lbs-ft).
3. Attach all drivelines to gearbox.
4. Install all shields.



1. Shaft 44 mm (1-3/4"), 20 spline, wing
2. Oil seal
3. 3/8 plug
4. Snap ring
5. Bearing
6. Pinion gear
7. Bearing
8. Shim
9. Housing
10. Snap ring
11. Oil seal
12. Shim
13. Bearing
14. Shaft 44 mm (1-3/4"), 20 spline, centre
15. Snap ring
16. Bearing
17. Gear
18. 1/2 Breather
19. 5/16 Lock washer
20. M8 x 30 Cap screw 8.8
21. Cover
22. Snap ring

Figure 12. Splitter Gearbox Assembly

CROSSBAR REMOVAL

1. It is necessary to gain access to bottom side of cutter for crossbar removal. See Blocking Method page 13.
NOTE: You will need to use either the puller screw (Item 6, Figure 14) or a small hydraulic jack to remove the crossbar.
2. Remove blades from crossbar as shown in Figure 13.

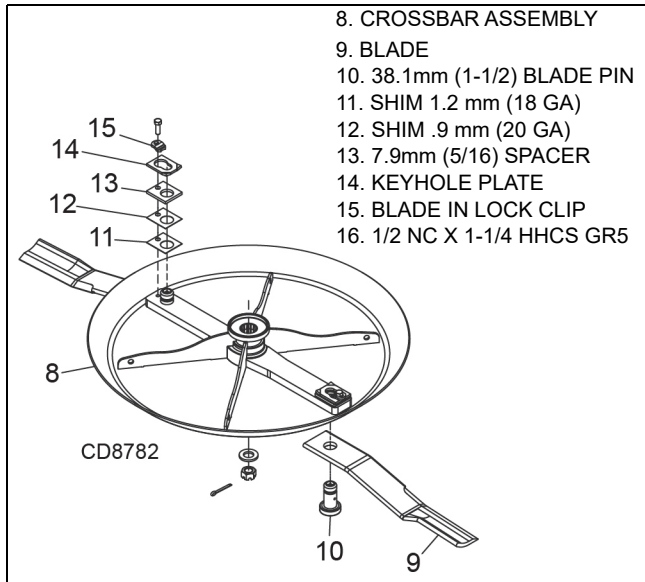


Figure 13. Blade Removal

3. Refer to Figure 14. Remove cotter pin from bottom of crossbar and remove nut and washer.
4. Attach a clevis (1) to each end of crossbar, using blade pins, spacers, keyhole plates, and blade pin clips.
5. Position tube assembly (5) with threaded nut (4) toward crossbar for puller screw removal or down for hydraulic jack removal.
6. For removal with puller screw, attach tube (5) to each clevis with bolts (2) and nuts (3). Place pad (4) in nut and thread puller screw (6) into nut from bottom. Tighten until pad is solid against gearbox shaft. For best results, strike head of puller screw with a hammer while tightening with a wrench.
7. For removal with a jack, attach tube to each clevis with puller links (7), bolts (2), and nuts (3). Place jack on tube with end of jack pressing against gearbox shaft. Slowly apply force with jack.

NOTE: Hydraulic jack will not operate if tipped more than 90°. Use care to prevent bending crossbar during removal.

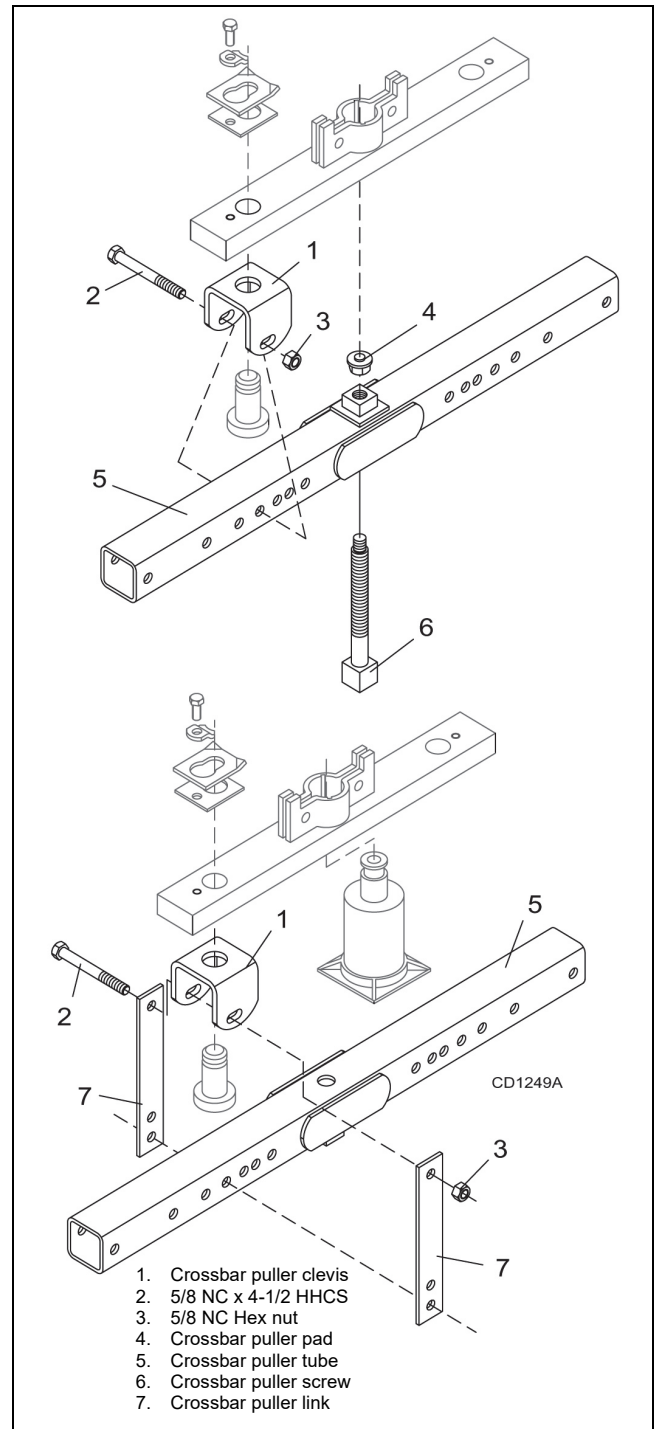


Figure 14. Crossbar Removal

CROSSBAR INSTALLATION

1. Using emery cloth (220 or finer), remove surface rust, Loctite® and foreign material from hub, splined gearbox vertical shaft, and crossbar assembly.
2. Slide crossbar assembly (10) onto splined shaft. Install washer (71) and nut (72) and align a slot with hole in splined shaft. Torque nut to 610 Nm (450 lbs-ft).
3. Install cotter pin (73) through slot in nut and bend ends over.

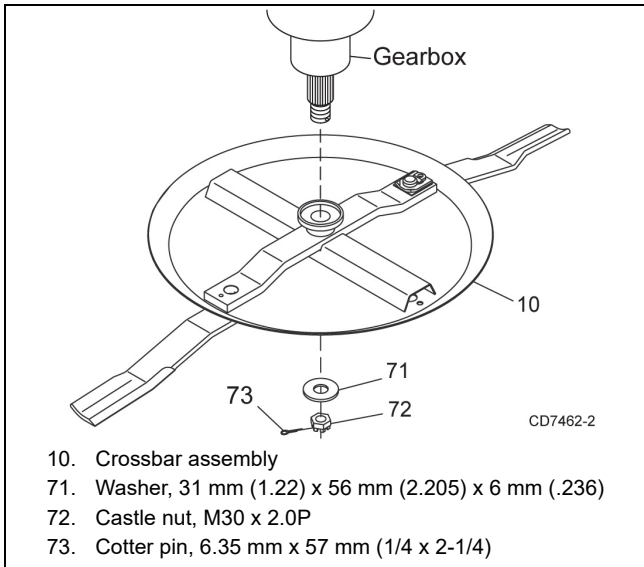


Figure 15. Crossbar Assembly Installation

UNIVERSAL JOINT REPAIR

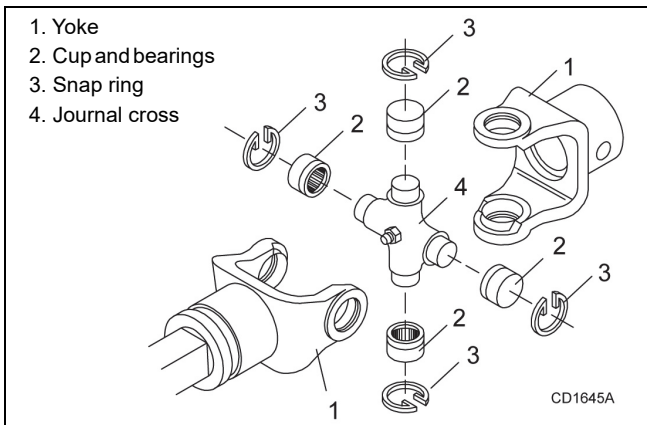


Figure 16. U-Joint Exploded View

U-Joint Disassembly

1. Remove external snap rings from yokes in four locations as shown in Figure 17.

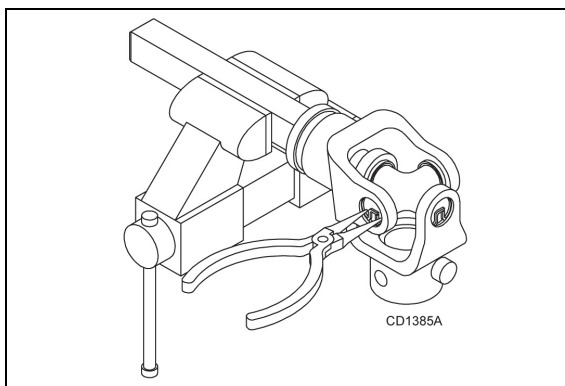


Figure 17

2. With snap rings removed, support drive in vise, hold yoke in hand and tap on yoke to drive cup up out of yoke. See Figure 18.

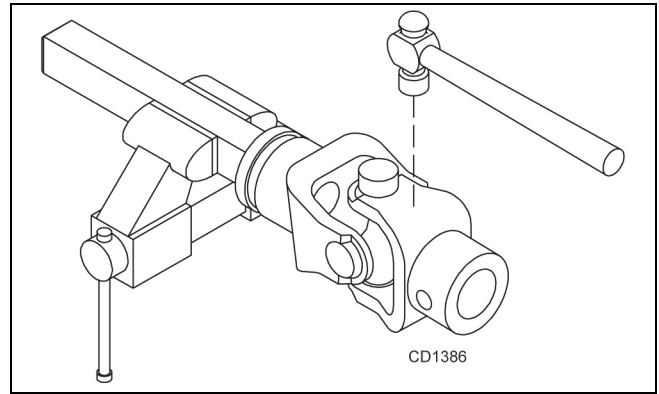


Figure 18

3. Clamp cup in vise as shown in Figure 19 and tap on yoke to completely remove cup from yoke. Repeat step 2 and step 3 for opposite cup.

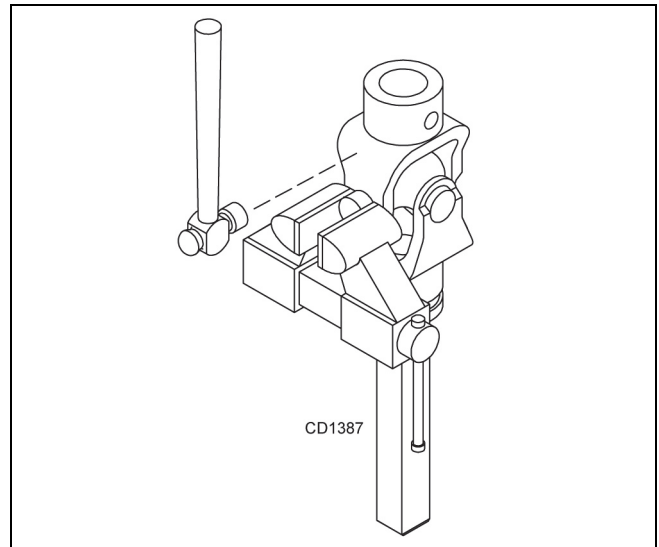


Figure 19

4. Place universal cross in vise as shown in Figure 20 and tap on yoke to remove cup. Repeat Step 3 for final removal. Drive remaining cup out with a drift and hammer.

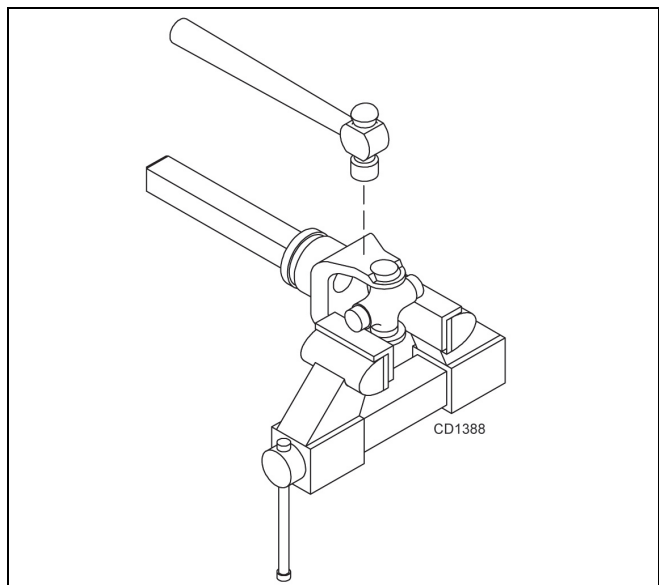


Figure 20

U-Joint Assembly

1. Place seals securely on bearing cups. Insert cup into yoke from outside and press in with hand pressure as far as possible. Insert journal cross into bearing cup with grease fitting away from shaft. Be careful not to disturb needle bearings. Insert another bearing cup directly across from first cup and press in as far as possible with hand pressure.
2. Trap cups in vise and apply pressure. Be sure journal cross is started into bearings and continue pressure with vise, squeezing in as far as possible. Tapping the yoke will help.
3. Seat cups by placing a drift or socket (slightly smaller than the cup) on cup and rap with a hammer. Install snap ring and repeat on opposite cup.
4. Repeat Step 1 and Step 2 to install remaining cups in remaining yoke.
5. Move both yokes in all directions to check for free movement. If movement is restricted, rap on yokes sharply with a hammer to relieve any tension. Repeat until both yokes move in all directions without restriction.

ASSEMBLY INSTRUCTIONS

DEALER SET-UP INSTRUCTIONS

Assembly of this cutter is the responsibility of the WOODS dealer. It should be delivered to the owner completely assembled, lubricated and adjusted for normal cutting conditions.

The cutter is shipped partially assembled. Assembly will be easier if components are aligned and loosely assembled before tightening hardware. Recommended torque values for hardware are located on page 72.

Select a suitable working area. A smooth hard surface, such as concrete, will make assembly much quicker. Open parts boxes and lay out parts and hardware to make location easy. Refer to illustrations, accompanying text, parts lists and exploded view drawings.

Complete the check list on page 28 when assembly is complete and cutter is delivered to the customer.

WARNING

■ Before working underneath, carefully read Operator's Manual instructions, disconnect driveline, raise mower, securely block up all corners with jackstands, and check stability. Secure blocking prevents equipment from dropping due to hydraulic leak down, hydraulic system failures, or mechanical component failures.

■ Do not disconnect hydraulic lines until machine is securely blocked or placed in lowest position and system pressure is released by operating valve levers.

CAUTION

■ Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

Tongue Height	Attitude Rod Length Beyond Nuts (34)
Tongue at 279 mm	114 mm
Tongue at 457 mm	63.5 mm

Install Wheel

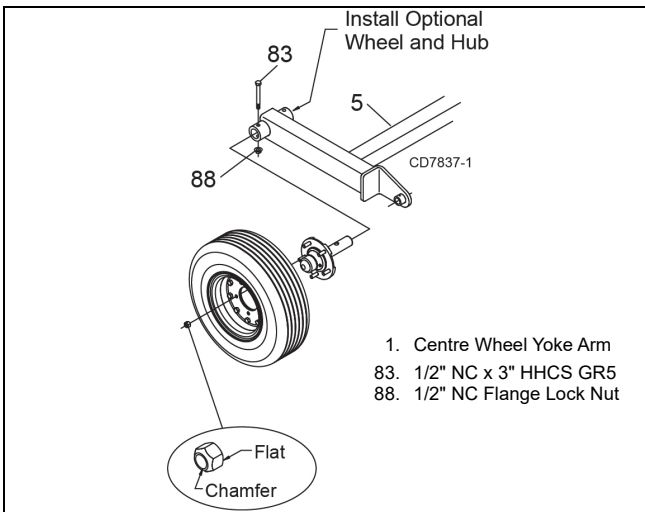


Figure 21. Centre Section Wheel and Hub Installation

Install Wing Wheel (Figure 22)

1. Insert wheel hub into wing wheel yoke arms (5) and align holes.
2. Secure into position using cap screw (83) and flanged lock nut (88).
3. Attach wheel to hub using five lug nuts. Install the chamfered side of the lug nut toward the inside for steel rim for pneumatic tires and rims. Tighten to 115 Nm. Check that tire air pressure is a maximum of .27 MPa.

NOTE: Install the flat side of the nut toward the inside for solid tires and aircraft tires (shown).

4. Install optional dual wheel and hub to inside of wheel yoke arm.

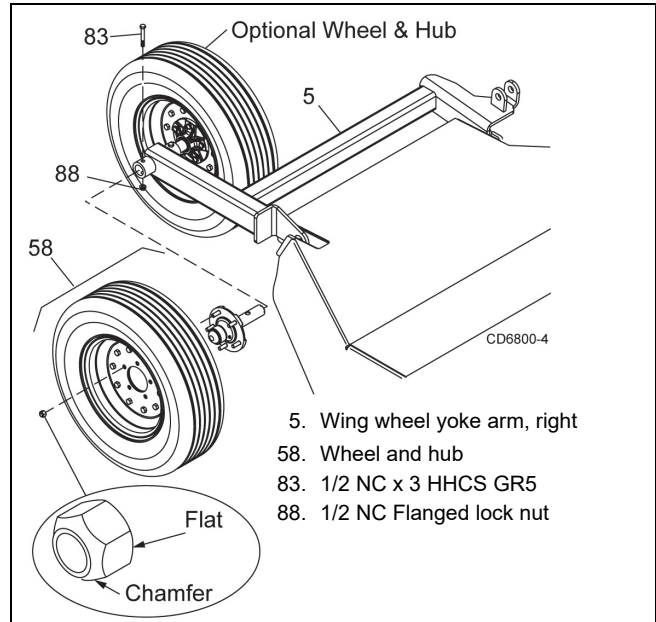


Figure 22. Wing Wheel - Right

Tandem Axle Arm Installation (Optional for .60 & .70 Series)

Refer to page 70 for parts list and diagram.

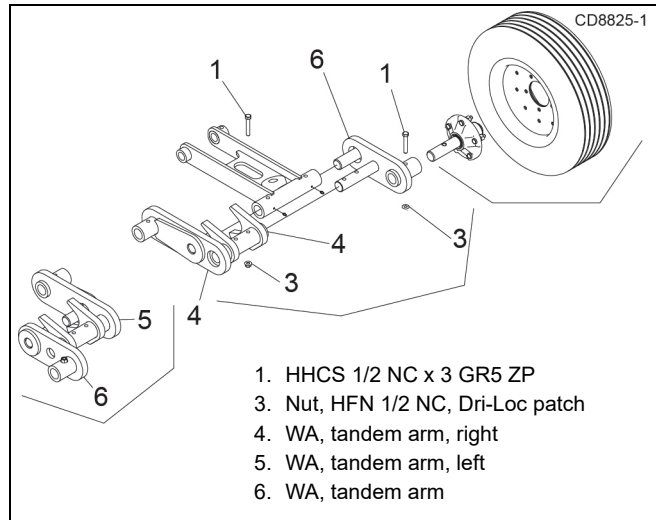


Figure 23. Tandem Axle Installation

1. Raise unit and support with jack stands per diagram on page xx to take pressure from tires.
2. Remove wheel assembly from right spring arm hub assembly from centre frame.
3. Remove axle hub from right spring arm.
4. Install drive type grease fitting in four holes in spring arm.
5. Install tandem arm 1045738 as shown.
6. Install tandem arm 1045739 as shown, sliding both axles into receiving tubes. Fasten with screws 3489 and nuts 1045624 provided.
7. Install axle/hub 1017050 and secure with screw 3489 and nut 1045624, reused or purchased separately as needed.
8. Install wheel assembly.
9. Repeat for left spring arm of centre frame, using 1045850 in place of 1045838, installed from the centre.
10. Repeat for wings if purchased, noting orientation of parts to locate wheels in the correct position. Outer wheel should be forward of inner wheel on both wings.

(Rev. 06/01/2020)

MAN1246 (04/10/2018)

Shredding Kit Installation (Optional for .60 & .70 Series)

Refer to page 71 for parts list and diagram.

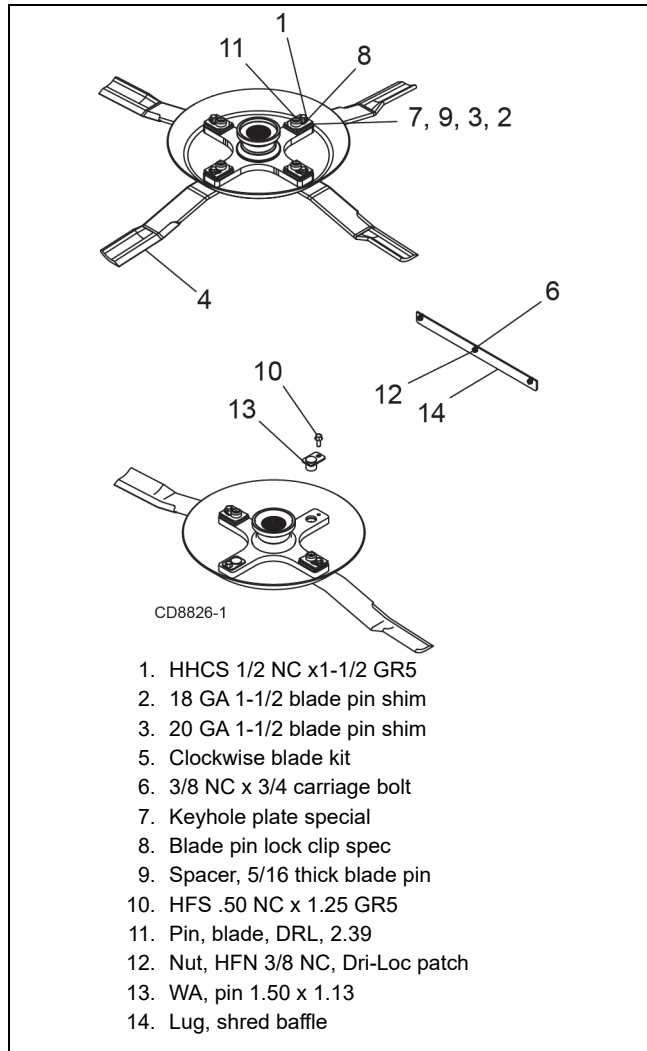


Figure 24. Shredding Kit Installation

Installation Instructions

1. Install supplied shred kit blades as shown, using shims to obtain no more than .25" movement at blade tip. Stack shims.
2. Install clockwise blades for left wing.

3. Install baffle extensions 1045884 with supplied hardware onto front wing baffles.

To Return to Brush Cutting

1. Remove baffles.
2. Remove one opposing set of blades and hardware from each crossbar.

To Protect Unused Hole for Following Season

- Coat tab pin into hole and secure with screw 1031225.
- For lower horsepower shredding, remove baffle extensions. For extremely low horsepower shredding, order 3 sets of flat double edge blade kits 19162KT.

Double Chain Installation (Optional)

NOTICE

DO NOT REMOVE SINGLE ROW CHAIN AS INSTALLED FROM FACTORY. DOUBLE ROW CHAIN KIT IS AN ADDITION TO STANDARD SINGLE ROW CHAIN SHOWN.

1. Raise unit to full height and install transport lock pin, see page 15. Refer to page 16 for blocking instructions.
2. Remove one single chain locking bracket from unit at a time.
3. Compare removed bracket with new double lock brackets to identify correct new part. Refer to Figure 25 for example.

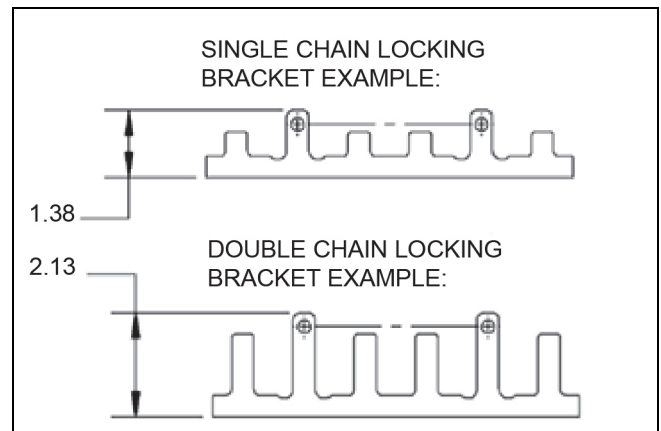


Figure 25.

4. Leave single chain in place except where noted.
5. Install chain as shown in pages 64 & 65, doubling over on centre link and sliding over on extended finger. Centre chain loop may be vertical or horizontal as required for installation.
6. Install new lock bracket and attach with new hardware provided.
7. Repeat for each individual locking bracket.
8. Install rear chain flap on wing tail wheel arms if wing arm has lug for attachment. Discard if there is no lug on wheel arm. See page 64.

DEALER CHECK LISTS

PRE-DELIVERY CHECK LIST (DEALER'S RESPONSIBILITY)

Inspect the equipment thoroughly after assembly to ensure it is set up properly before delivering it to the customer.

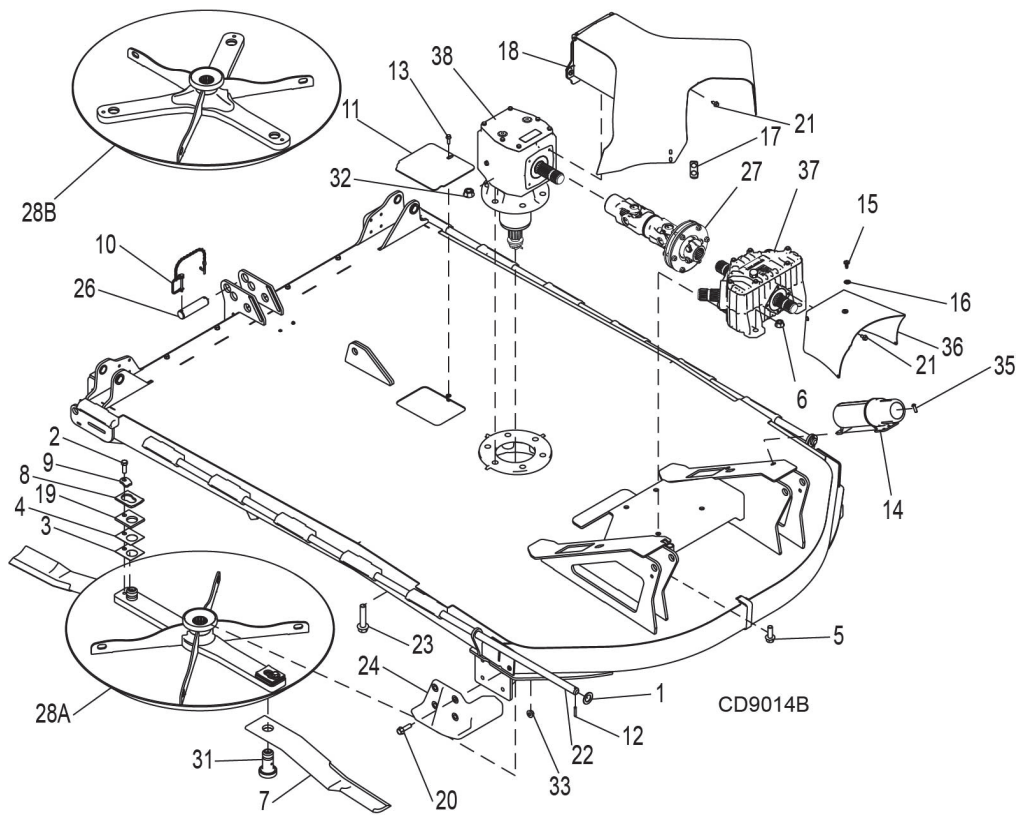
The following check lists are a reminder of points to inspect. Check off each item as it is found satisfactory or after proper adjustment is made.

- ___ Check that all safety decals are installed and in good condition. Replace if damaged.
- ___ Check that shields and guards are properly installed and in good condition. Replace if damaged.
- ___ Check all bolts to be sure they are properly torqued.
- ___ Check wheel bolts for proper torque.
- ___ Check that all cotter pins and safety pins are properly installed. Replace if damaged.
- ___ Check that blades have been properly installed.
- ___ Check and grease all lubrication points as identified in lubrication information on page 16.
- ___ Check the level of gearbox fluids before delivery. Service, if required, as specified in the lubrication information on page 16.

DELIVERY CHECK LIST (DEALER'S RESPONSIBILITY)

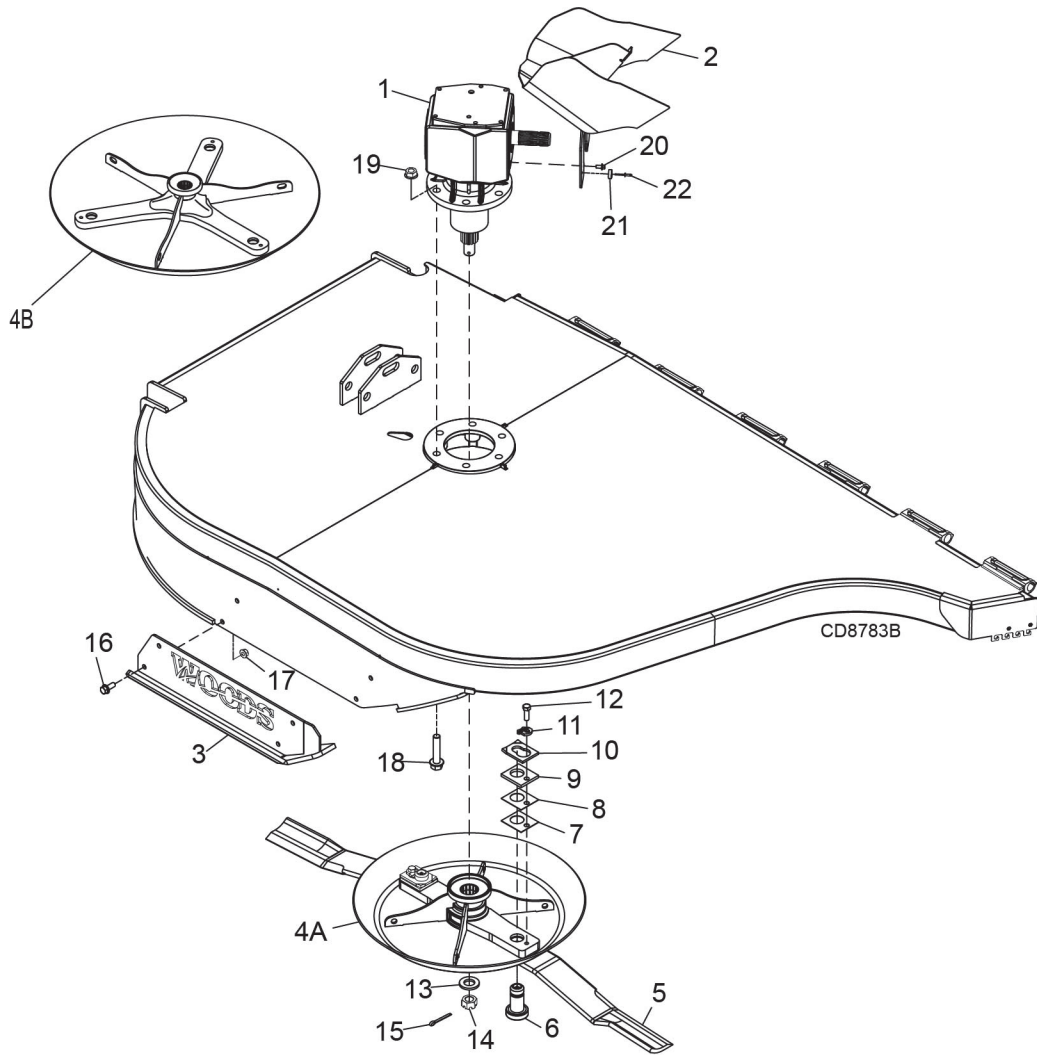
- ___ Show customer how to make adjustments and select proper PTO speed.
- ___ Show customer how to make sure driveline is properly installed and that spring-activated locking pin or collar slides freely and is seated in groove on tractor PTO shaft.
- ___ Show customer how to determine the turning limits of the CV PTO driveline.
- ___ Show customer the safe, proper procedures to be used when mounting, dismounting, and storing equipment.
- ___ Make customer aware of optional equipment available so that customer can make proper choices as required.
- ___ Instruct customer how to lubricate and explain importance of lubrication.
- ___ Point out the safety decals. Explain their meaning and the need to keep them in place and in good condition. Emphasize the increased safety hazards when instructions are not followed.
- ___ Explain to customer that when transporting the cutter, the wing and centre sections should be raised and their respective transport bars installed and pinned in place.
- ___ Present Operator's Manual and request that customer and all operators read it before operating equipment. Point out the manual safety rules, explain their meanings and emphasize the increased safety hazards that exist when safety rules are not followed.
- ___ Explain to customer the potential crushing hazards of going underneath raised equipment. Instruct that before going underneath to disconnect the driveline, securely block up all corners with jack stands and to follow all instructions in the BLOCKING METHOD, page 16 of the operator's manual. Explain that blocking up prevents equipment dropping from hydraulic leak down, hydraulic system failures or mechanical component failures.
- ___ Point out all guards and shields. Explain their importance and the safety hazards that exist when not kept in place and in good condition.
- ___ Explain to customer that when towing on a public road to comply with all state and local lighting/marketing laws and to use a safety tow chain.

CENTRE FRAME ASSEMBLY



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1863	2	Washer 1 SAE flat	28A	1044940RP	1	WA, crossbar, center, BW15.50
2	3379	2	HHCS 1/2 NC x 1-1/2 GR5 ZP	28B	614219RP	1	WA, crossbar, center BW15.50E 3 Blade
3	10520RP	2	18 GA 1-1/2 blade pin shim	29	1045000	19	Nut, 1/4 - 20 UNC blind hole, hex
4	13946RP	2	20 GA 1-1/2 blade pin shim	30	1045003	3	Nut, 5/16 - 18 UNC blind hole, hex
5	19024	4	HFS 5/8 NC x 1-3/4 GR5	31	1045034RP	2	Pin, blade, dri, 2.39
6	19025	4	Nut, HFN 5/8 NC, Dri-Loc patch	32	1045611	6	Nut, HFN 3/4 NC, Dri-Loc patch
7	19160KT	**	Kit, 2 blades	33	1045624	8	Nut, HFN 1/2 NC, Dri-Loc patch
8	32603	2	Keyhole plate special	34	1045813	1	Nut, No. 10 - 24 blind hole
9	32604RP	2	Blade pin lock clip spec	35	1046050	2	Screw, BTN HD 5/16 NC x 1.0
10	52204	1	Asy - lynch pin, chain & cotter	36	1046056RP	1	WA, shield, front, CE
11	57050RP	1	Link bent .14 x 9.00 x 7.84	37	1038897	1	Gearbox, repair splitter 540
12	66016	4	1/4 x 1-1/2 spiroil pin	37	1038898	1	Gearbox, repair splitter 1000
13	71632	1	Bolt whiz hex .312 - 18 x 1	38	617164RP	1	Gearbox, repair 1:1.56 CCW
14	602651	1	Canister, manual, Europe	38	617165RP	1	Gearbox, repair 1.22:1 CCW
15	603778	3	Screw, captured 8 mm				** Order 1 kit for 2 blade crossbar and order 2 kits for 3 blade crossbar
16	603780	3	Washer, 8 mm				NOT SHOWN
17	611381RP	2	Asy, center shield magnet	1045874			Complete decal set
18	611441RP	1	WA, center shield, CE	1045875			English safety decal set
19	1028824RP	2	Spacer, 5/16 thick blade pin	605877			French safety decal set
20	1028902	8	HFS 1/2 NC x 1-3/4 GR8	605878			Spanish safety decal set
21	1041071	7	Screw, HFS, M8 - 1.25 x 16 CL8.8, patch	605879			Italian safety decal set
22	1043438	2	Pin, hinge	605880			German safety decal set
23	1043460	6	Screw, HFS, 3/4 NC x 3.5 GR5	615257			Czech safety decal set
24	1044390	1	Skid, shoe RT	615258			Danish safety decal set
25	1044391	1	Skid, shoe LT	615279			Finnish safety decal set
26	1044831	1	Pin, 1.25 x 5.00	615286			Swedish safety decal set
27	1044896	1	Drv, 2JT FXD - 2400 1.75 - 20, 6.88 CL				

WING ASSEMBLY



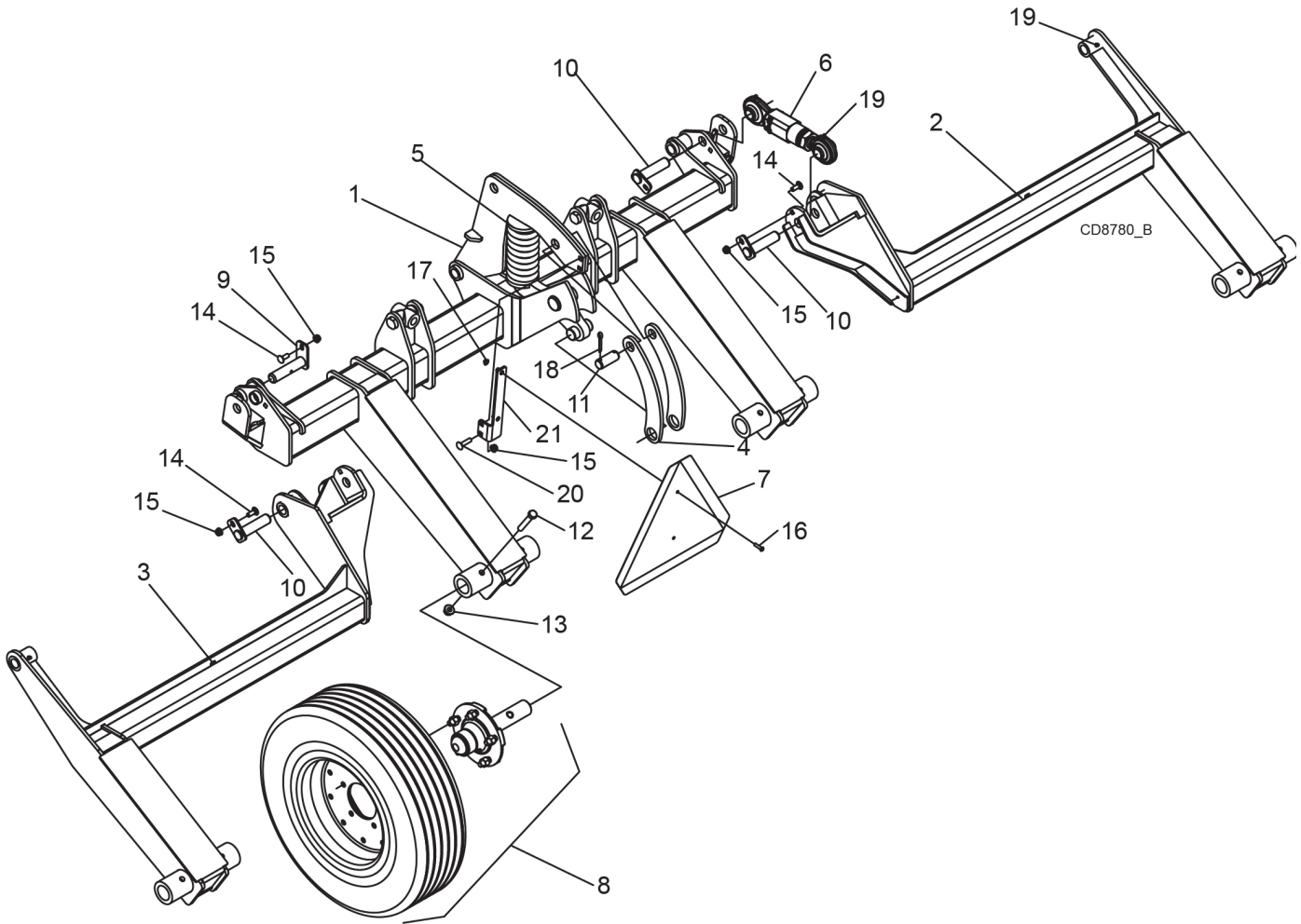
REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	617166RP	1	Gearbox, right wing (see page 34) -OR-	9	1028824RP	2	Spacer, 5/16 thick
1	617167RP	1	Gearbox, left wing (see page 34)	10	32603	2	Keyhole plate - special
2	1046059RP	1	Clutch shield, hinged	11	32604RP	2	Blade pin lock clip - special
3	1044990RP	1	Skid, right wing -OR-	12	3379*	2	1/2 NC x 1-1/2 HHCS, GR5
3	1044991RP	1	Skid, left wing	13	1024670	1	Washer, 31 mm x 56 mm x 6 mm
4A	1044941RP	1	Crossbar assembly, 2 Blades	14	39323	1	M30 x 2.0P castle nut
4B	614219RP	1	Crossbar assembly, 3 Blade	15	6185 *	1	6.35 mm x 57 mm cotter pin
5	19160KT	1	Blade kit, 2 blades CCW (right wing) (2 blade crossbar assembly only) -OR-	16	1031225	4	1/2 NC x 1-1/4 HFS, GR5
5	19161KT	1	Blade kit, 2 blades CW (left wing) (2 blade crossbar assembly only)	17	11900 *	4	1/2 NC flanged lock nut
5	57099KT	2	Blade kit, 2 blades CCW (right wing) (3 blade crossbar assembly only) -OR-	18	1043460	6	3/4 NC x 3-1/2 HFS, GR5
5	1003490KT	2	Blade kit, 2 blades CW (left wing) (3 blade crossbar assembly only)	19	1045611	6	3/4 NC flanged lock nut
6	1045034RP	2	38.1 mm blade pin	20	1041071	4	M8 - 1.25P x 16 mm HFS, CL8.8
7	10520RP	2	Shim, 18 GA, 1-1/2 blade pin	21	603778	2	8 mm screw
8	13946RP	2	Shim, 20 GA, 1-1/2 blade pin	22	603779	2	8 mm retainer

* Standard Hardware, Obtain Locally

HHCS Hex Head Cap Screw

HFS Hex Flange Screw

CENTRE WHEEL YOKE ASSEMBLY



REF	PART	QTY	DESCRIPTION
1	1044963RP	1	Wheel yoke, centre
2	1044964RP	1	Wheel yoke, right
3	1044965RP	1	Wheel yoke, left
4	1045012RP	2	Spring link
5	1032100RP	1	Spring, comp 82.6 mm x 14.2 mm x 185 mm x 1113
6	1039950	2	Adjustable link
7	24611	1	SMV emblem
8	-----	4	Tire & hub (see page 67)
9	1044844	3	25 mm x 109 mm pin
10	1038100	8	25 mm x 98 mm Pin
11	1044832	1	25 mm x 64 mm Pin

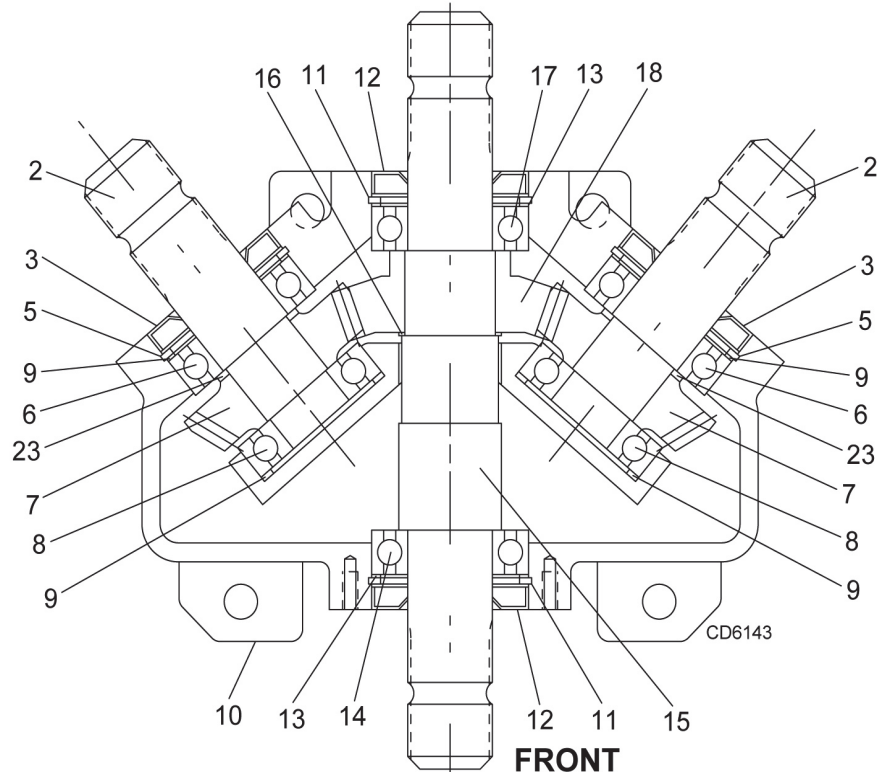
REF	PART	QTY	DESCRIPTION
12	3489 *	4	1/2 NC x 3 HHCS, GR5
13	11900 *	4	1/2 NC flanged lock nut
14	6697 *	11	3/8 NC x 1 carriage bolt, GR5
15	14350 *	13	3/8 NC flanged lock nut
16	1041087 *	2	1/4 NC x 1 button head screw, GR5
17	W70065 *	2	1/4 NC whiz nut
18	1285 *	2	6.35 mm x 38.1 mm cotter pin
19	1043432 *	10	Zerk, 1/4 drive type
20	W301104	2	3/8 NC x 1.5 carriage bolt GR5
21	1046094RP	1	SMV bracket

* Standard Hardware, Obtain Locally
HHCS Hex Head Cap Screw

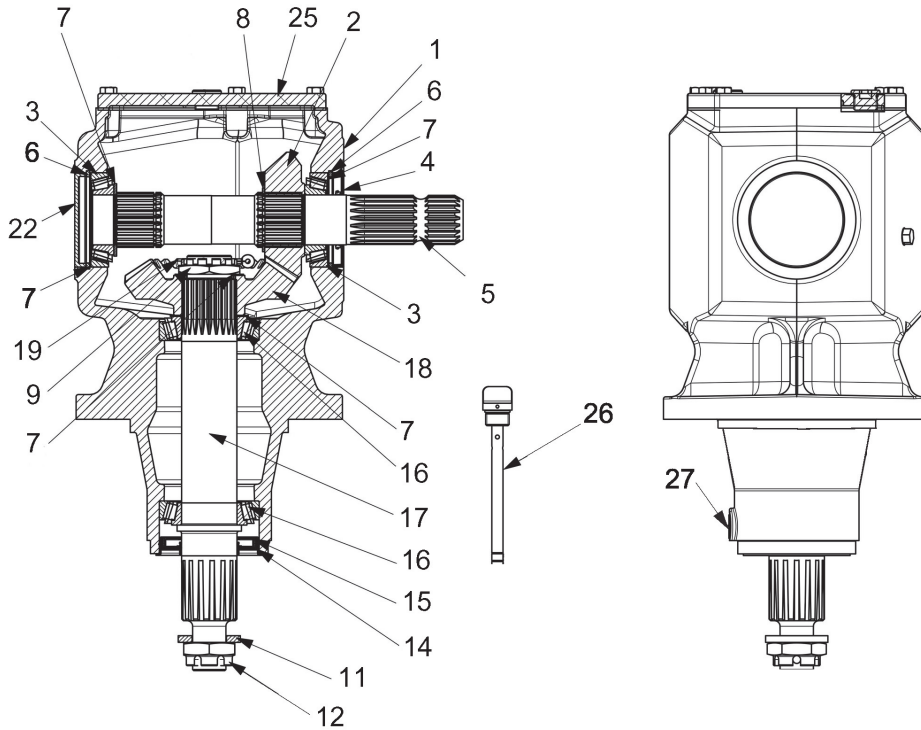
SPLITTER GEARBOX ASSEMBLY

REF	PART	PART	QTY	DESCRIPTION
	540 RPM	1000 RPM		
1	1038897	1038898	-	Complete splitter gearbox
2	1005308	1005308	2	Shaft 1-3/4-20 spline, wing
3	1005304	1005304	2	Oil seal
4	-----	-----	2	3/8 plug (not shown)
5	39251	39251	2	Snap ring
6	20891	20891	2	Bearing
7	1005305	1005312	2	Gear
8	39414	39414	2	Bearing
9	1005306	1005306	4	Shim
10	-----	-----	1	Casting
11	57320	57320	2	Snap ring
12	57318	57318	2	Oil seal
13	1005307	1005307	2	Shim
14	1005319	1005319	1	Bearing
15	1005303	1005303	1	Shaft 1-3/4-20 spline, center
16	1005309	1005309	1	Snap ring
17	1034979	1034979	1	Bearing
18	1005310	1005313	1	Gear
19	57076	57076	1	1/2 breather
20	2472	2472	*	5/16 lock washer, standard
21	-----	-----	*	M8 x 30 mm HHCS CL 8.8
22	1005311	1005311	1	Cover
23	20895	20895	2	Snap ring

* Standard hardware, obtain locally



WING & CENTRE GEARBOX ASSEMBLY



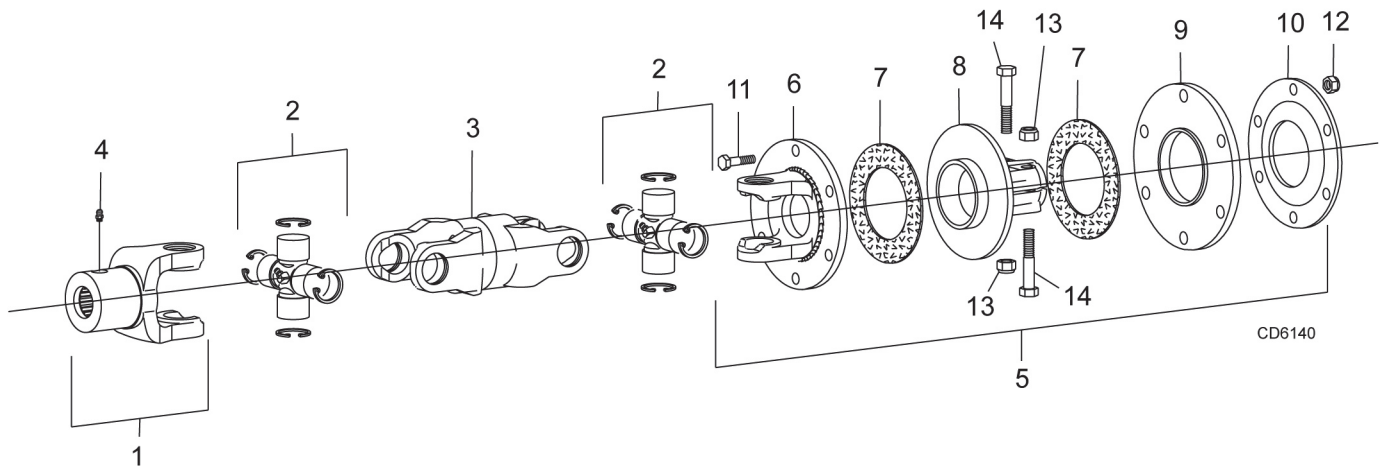
REF #	QTY	DESCRIPTION	LEFT WING	RIGHT WING	CENTER	CENTER
			540 & 1000	540 & 1000	540 ONLY	1000 ONLY
A	1	Complete repair gearbox	617167RP	617166RP	617164RP	617165RP
1	1	Gearbox housing	NS	NS	NS	NS
2	1	Gear crown	57316	57316**	57315	1005317
3	2	Bearing cup & cone	39411	39411	39411	39411
4	1	Oil seal 45 x 85 x 10	57318	57318	57318	57318
5	1	Input shaft	57319	57319	57319	57319
6	2	Snap ring 85 UNI7437	57320	57230	57320	57320
7	1	Shim kit	57471	57471	57471	57471
8	1	Snap ring 50 UNI7435	57321	57321	57321	57321
9	1	Castle nut M40 x 1.5 P	57329	57329	57329	57329
11	1	Washer, 1.22 x 2.205 x .236	1024670	1024670	1024670	1024670
12	1	Castle nut M30 x 2.0P	39323	39323	39323	39323
14	1	Protective seal	57338	57338	57338	57338
15	1	Oil seal 50 x 90 x 10	1045873	1045873	1045873	1045873
16	2	Bearing cup & cone	39263	39263	39263	39263
17	1	Output shaft	57356	57356	57356	57356
18	1	Gear pinion	57358	57358	57358	57358
19	1	Cotter pin 3/16 x 2	*	*	*	*
22	1	Cap	57371	57371	57371	57371
25	1	Top cover	1045878	1045878	1045878	1045878
26	1	Dipstick, 1/2 x 6.18	1045872	1045872	1045872	1045872
27	1	Magnetic drain plug	1045877	1045877	1045877	1045877
28	1	Gearbox repair kit (includes items 16, 17, 14, 8, 20, 7, 15, 4)	1005512	1005512	1005512	1005512

** Crown gear placed on opposite end of input shaft for right wing

* Standard hardware, obtain locally

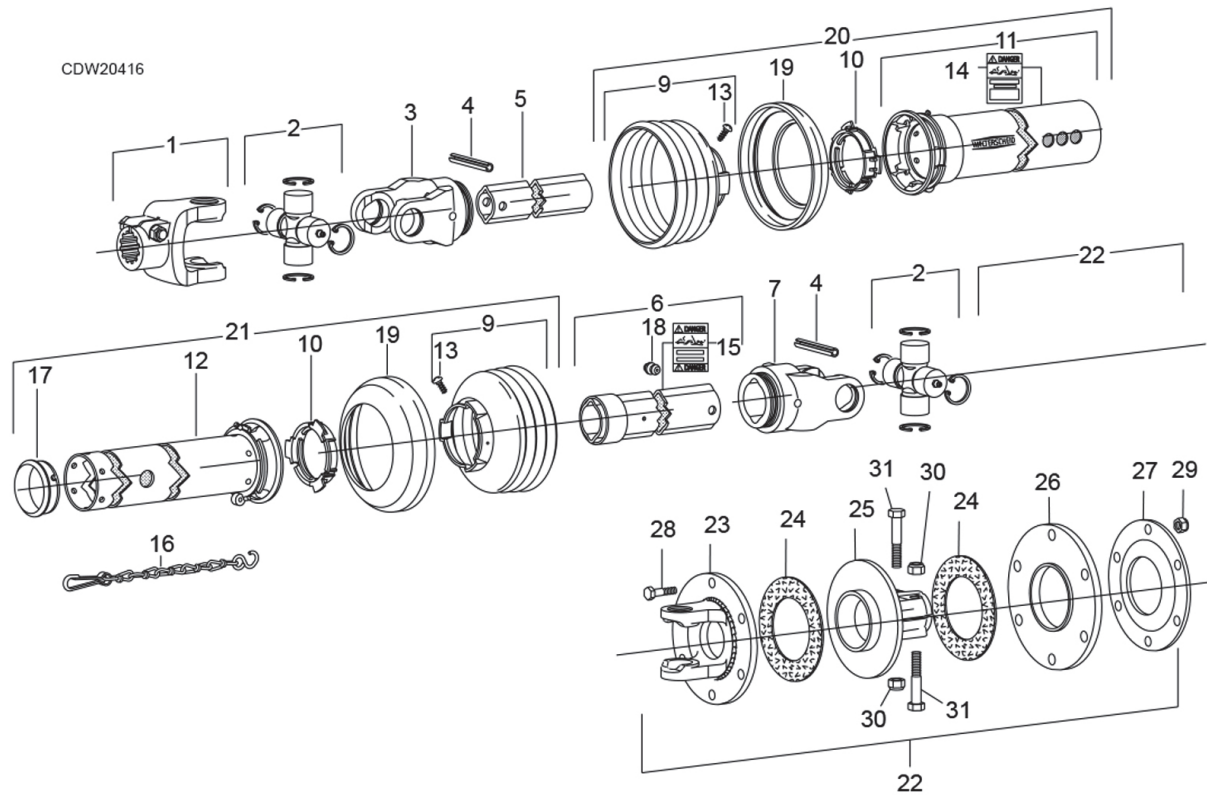
NS Not serviced

CENTRE DECK DRIVE ASSEMBLY



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
A	1044896	1	Complete centre drive assembly	8	57440	1	Hub, 1-3/4, 20 spline
1	1019107	1	Yoke, 1-3/4, 20 spline	9	57434	1	Thrust plate
2	1045581	2	Cross & bearing kit	10	57439	1	Belleville spring plate
3	1045576	1	Double yoke	11	57259	6	M10 x 1.5P x 55 mm HHCS 8.8
4	1005521	1	Grease fitting	12	57260	6	M10 x 1.5P hex lock nut
5	1019114	1	Friction clutch 1340 1-3/4, 20 spline	13	57261	2	M12 x 1.75P hex lock nut
6	1027217	1	Flange yoke	14	57262	2	M12 x 1.75P x 65 mm HHCS 8.8
7	57432	1	Friction disc (package of 2)	15	1005508		Clutch repair kit (includes items 7, 10, 11, 12, 13 & 14)

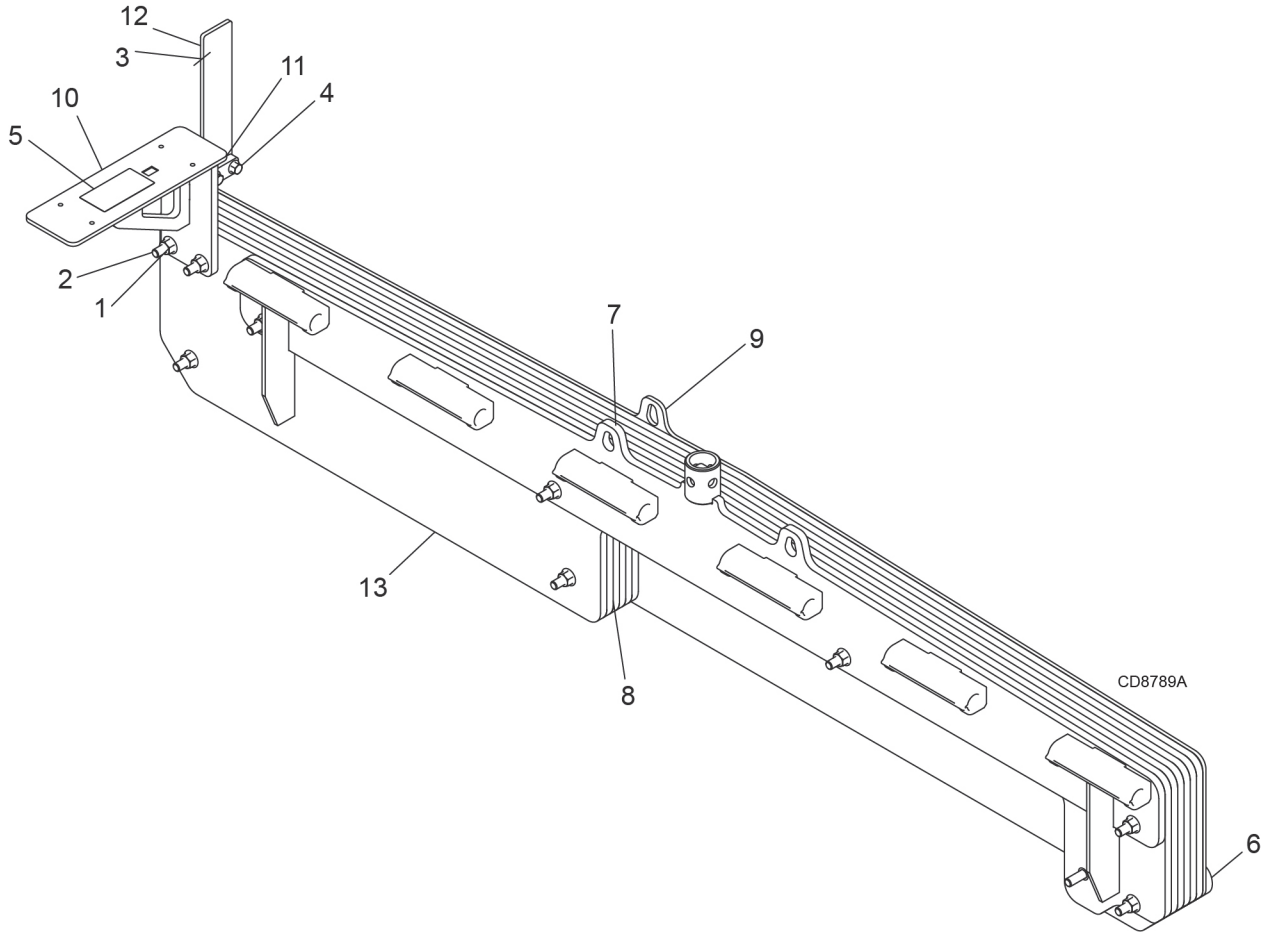
WING DRIVE ASSEMBLY



REF	PART	QTY	DESCRIPTION
A	1045077	1	Complete Wing Drive Assembly
1	1019111	1	Yoke 1 3/4"-20 SPL. I.C.
2	1045581	2	Cross & bearing kit
3	90317916	1	Inboard yoke 1B
4	40764	2	Spring pin 10 x 80
5	40587	1	Inner profile 1B
6	1045582	1	Profile & sleeve WA-2AL
7	38353	1	Inboard yoke 2A
9	-	2	Guard cone 4 rib
10	40766	2	Bearing ring SC25
11	-	1	Guard tube outer
12	-	1	Guard tube inner
13	40778	2	Screw - in item 9
14	18864	1	Decal outer - in item 11
15	33347	1	Decal inner - in item 6
16	40777	1	Restraint chain
17	40767	1	Support bearing
18	40779	1	Zerk - in item 6
19	N/S	2	Reinforcing collar

REF	PART	QTY	DESCRIPTION
20	1045579	1	Outer guard half - includes items 9 - 11, 13, 14, 19
21	1045580	1	Inner guard half - includes items 9, 10, 12, 13, 16, 17, 19
22	1019114	1	Friction clutch 1-3/4, 20 spline
23	1027217	1	Flange yoke
24	57432	1	Friction disc (package of 2)
25	57440	1	Hub, 1-3/4, 20 spline
26	57434	1	Thrust plate
27	57439	6	Belleville spring plate
28	57259	6	M10 x 1.5P x 55 mm HHCS
29	57260	6	M10 x 1.5P hex lock nut
30	57261	2	M12 x 1.75P hex lock nut
31	57262	2	M12 x 1.75P x 65 mm HHCS 8.8
	N/S		Not serviced

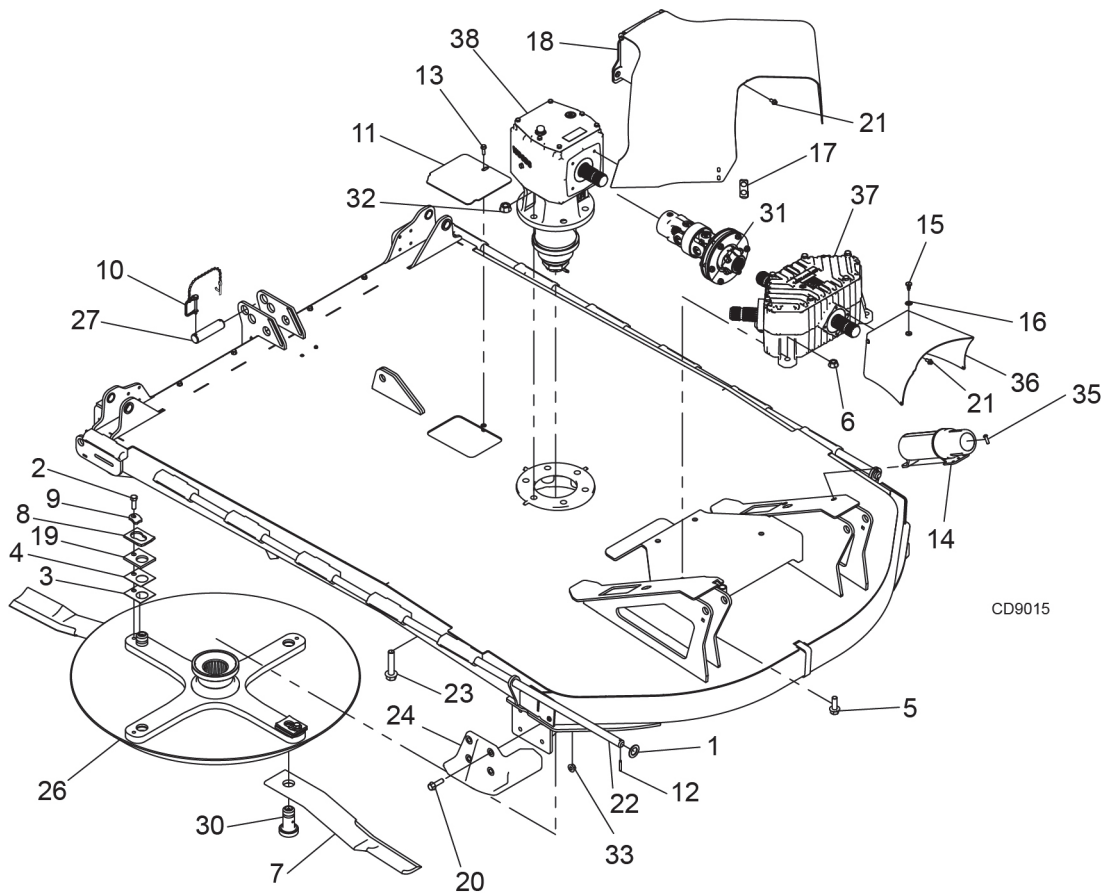
BW10.50E / BW10.50QE WEIGHT BOX ASSEMBLY



REF	PART	QTY	DESCRIPTION
1	11900	10	Nut lock 1/2 NC flange
2	23479	10	HHCS 1/2 NC x 5 GR5 ZP
3	57123	1	Decal 2 x 9 rear reflector
4	1033958	2	Screw .375 NC x 1 - .25 hex flange ser
5	1041910	1	Decal, notice, light kit
6	1045084	1	Plate, weight box skid
7	1045088	1	WA, weight box hinge
8	1045090	5	Plate, weight box inner
9	1045091	1	Plate, weight box outer
10	1045095	1	WA, Weight box mount
11	1045628	2	Nut, HFN 3/8 NC, Dri-Loc patch
12	1045883	1	Lug, weight box reflector
13	1046095	1	Plate, weight box inner notch

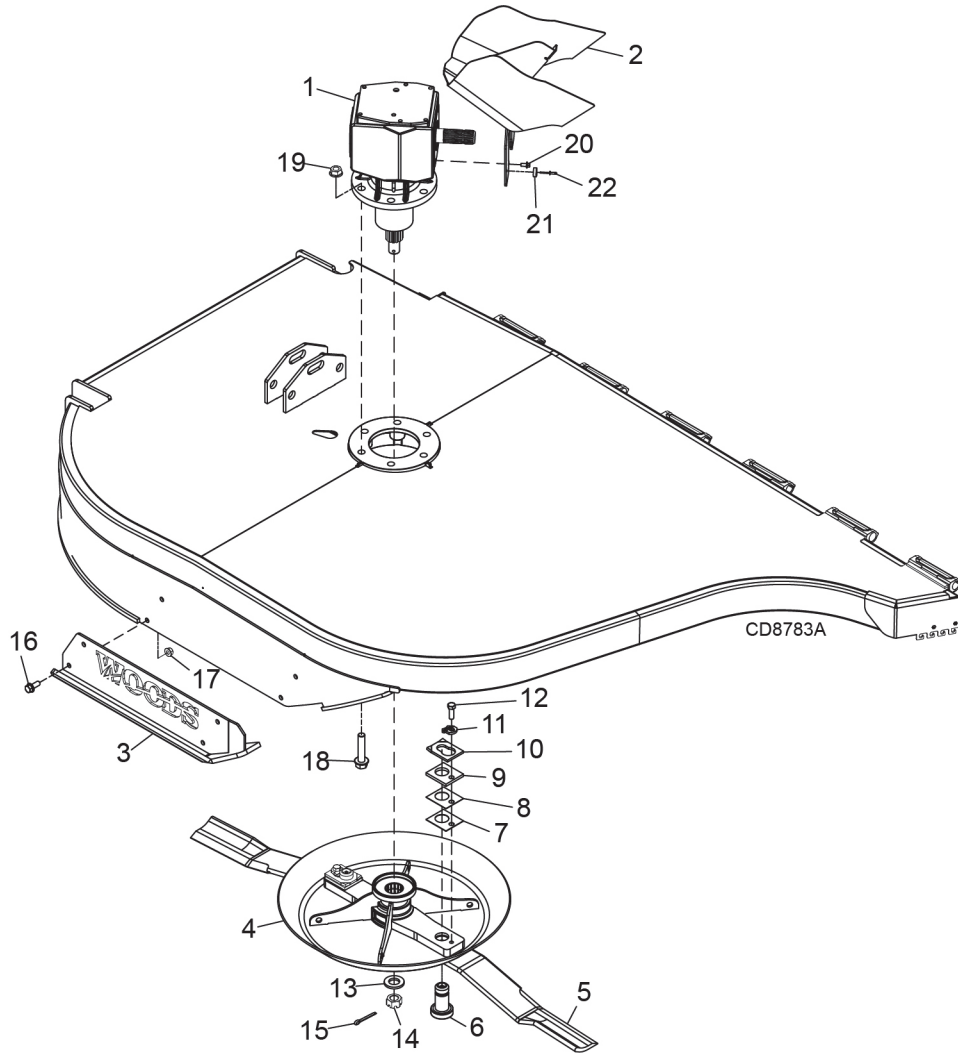
HHCS Hex head cap screw

CENTRE FRAME ASSEMBLY



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1863	2	Washer 1 SAE flat	27	1044831	1	Pin, 1.25 x 5.00
2	3379	2	HHCS 1/2 NC x 1-1/2 GR5 ZP	28	1045000	19	Nut, 1/4 - 20 UNC blind hole, hex
3	10520RP	2	18 GA 1-1/2 blade pin shim	29	1045033	3	Nut, 5/16 - 18 UNC blind hole, hex
4	13946RP	2	20 GA 1-1/2 blade pin shim	30	1045034RP	2	Pin, blade, drl, 2.39
5	19024	4	HFS 5/8 NC x 1-3/4 GR5	31	1045076	1	Drv, 2JT FXD - 2400A 1.75 - 20,3.4CL
6	19025	4	Nut, HFN 5/8 NC, Dri-Loc patch	32	1045611	6	Nut, HFN 3/4 NC, Dri-Loc patch
7	19160KT	1	Kit, blade, 19160 STD	33	1045624	8	Nut, HFN 1/2 NC, Dri-Loc patch
8	32603RP	2	Keyhole plate special	34	1045813	1	Nut, No. 10 - 24 blind hole
9	32604RP	2	Blade pin lock clip spec	35	1046050	2	Screw, BTN HD 5/16 NC x 1.0
10	52204	1	Asy - lynch pin, chain & cotter	36	104656RP	1	WA, shield, front, CE
11	57050RP	1	Link bent .14 x 9.00 x 7.84	37	1031185	1	Gearbox repair 1:1.35 / 1:1 (540 RPM)
12	66016	4	1/4 x 1-1/2 spirol pin	37	1031186	1	Gearbox repair 1.35:1 / 1:1 (1000 RPM)
13	71632	1	Bolt whiz hex .312 - 18 x 1	38	617178RP	1	Gearbox repair 1.158:1 CCW (540 RPM)
14	602651	1	Canister, manual, Europe	38	617179RP	1	Gearbox repair 1:1.6 CCW (1000 RPM)
15	603778	3	Screw, captured 8 mm				
16	603780	3	Washer, 8 mm				
17	611381RP	2	Asy, centre shield magnet	1045874			NOT SHOWN Complete decal set
18	611442RP	1	WA, centre shield, large, CE	1045875			English safety decal set
19	1028824RP	2	Spacer, 5/16 thick blade pin	605877			French safety decal set
20	1028902	8	HFS 1/2 NC x 1-3/4 GR8	605878			Spanish safety decal set
21	1041071	7	Screw, HFS, M8 - 1.25 x 16 CL8.8, patch	605879			Italian safety decal set
22	1043438	2	Pin, hinge	605880			German safety decal set
23	1043460	6	Screw, HFS, 3/4 NC x 3.5 GR5	615257			Czech safety decal set
24	1044390	1	Skid shoe, RT	615258			Danish safety decal set
25	1044391	1	Skid shoe, LT	615279			Finnish safety decal set
26	1044815RP	1	WA, crossbar, center, double	615286			Swedish safety decal set

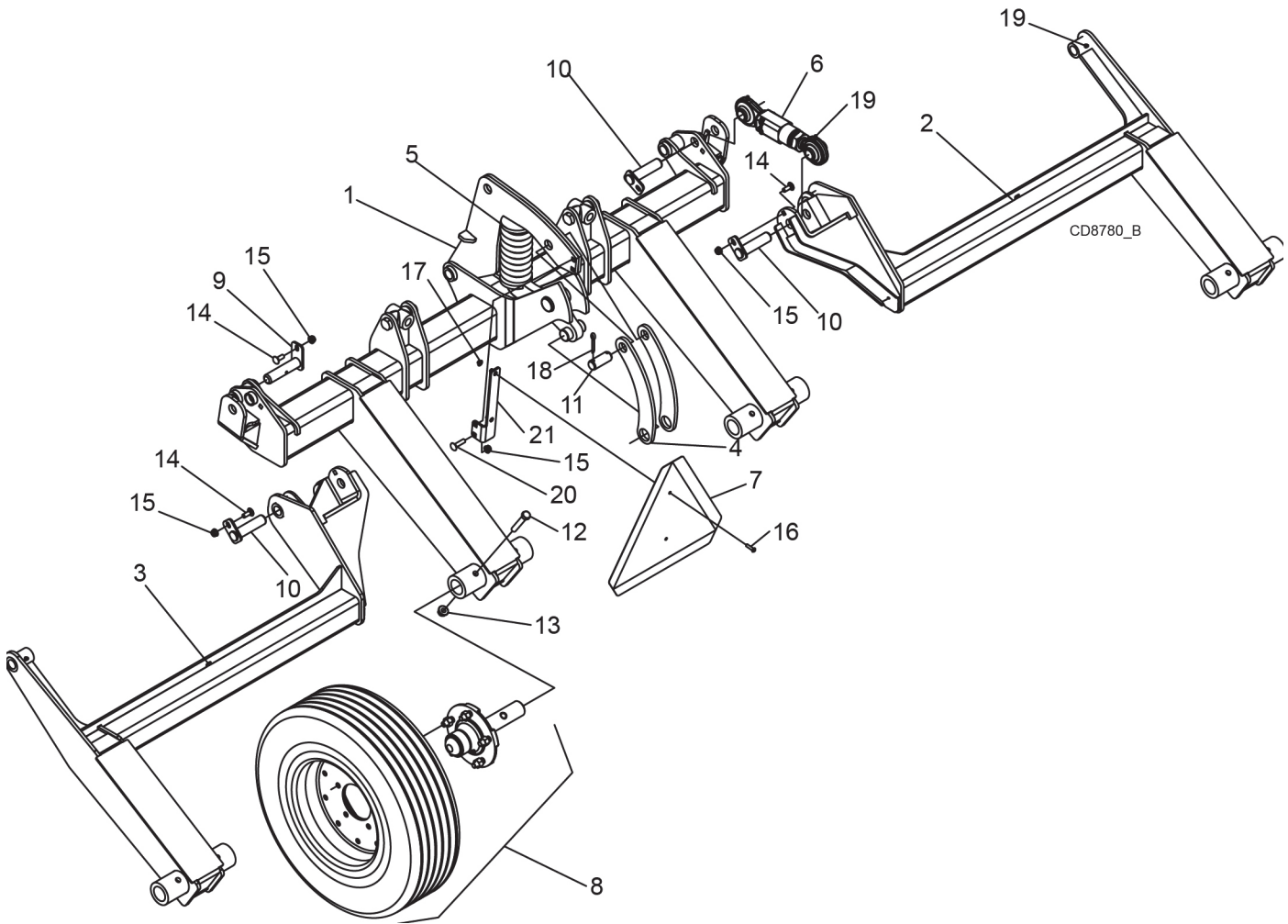
WING ASSEMBLY



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	617180RP	1	Gearbox, right wing (see page 45) -OR-	12	3379 *	2	1/2 NC x 1-1/2 HHCS, GR5
1	617181RP	1	Gearbox, left wing (see page 45)	13	1045695	1	Washer, 1.22 x 2.205 x .236
2	1046059RP	1	Clutch shield, hinged	14	1045894	1	M30 x 2.0P castle nut
3	1044990RP	1	Skid, right wing -OR-	15	6185 *	1	1/4 x 2-1/4 cotter pin
3	1044991RP	1	Skid, left wing	16	1031225	4	1/2 NC x 1-1/4 HFS, GR5
4	1044820RP	1	Crossbar assembly	17	11900 *	4	1/2 NC flanged lock nut
5	19160KT	1	Blade kit, CCW (right wing) -OR-	18	1043460	6	3/4 NC x 3-1/2 HFS, GR5
5	19161KT	1	Blade kit, CW (left wing)	19	1045611	6	3/4 NC flanged lock nut
6	1045034RP	2	1-1/2 blade pin	20	1041071	4	M8 - 1.25P x 16 MM HFS, CL8.8
7	10520RP	2	Shim, 18 GA, 1-1/2 blade pin	21	603778	2	8 mm screw
8	13946RP	2	Shim, 20 GA, 1-1/2 blade pin	22	603779	2	8 mm retainer
9	1028824RP	2	Spacer, 5/16 thick				
10	32603	2	Keyhole plate - special				
11	32604RP	2	Blade pin lock clip - special				

* Standard hardware, obtain locally
 HHCS Hex head cap screw
 HFS Hex flange screw

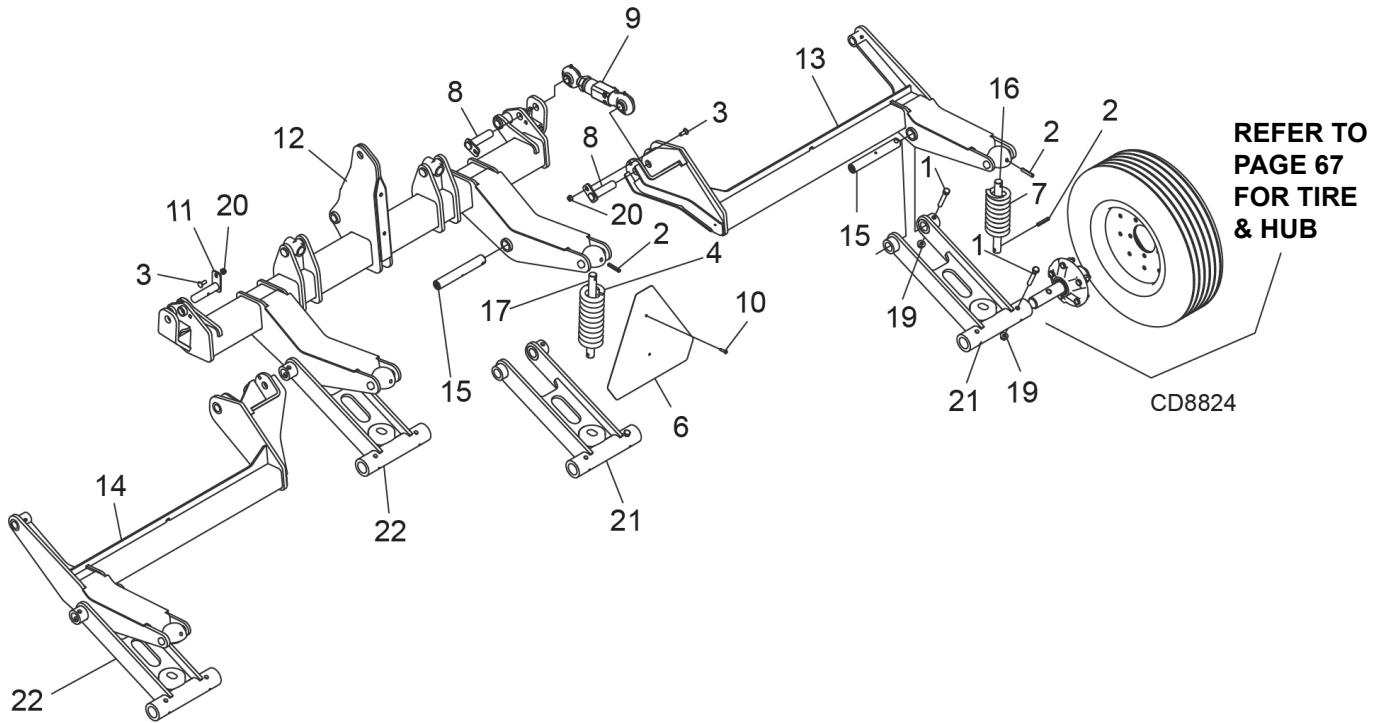
CENTRE WHEEL YOKE ASSEMBLY



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1044886RP	1	Wheel yoke, centre	12	3489 *	4	1/2 NC x 3 HHCS, GR5
2	1045008RP	1	Wheel yoke, right	13	11900 *	4	1/2 NC flanged lock nut
3	1045009RP	1	Wheel yoke, left	14	6697 *	11	3/8 NC x 1 carriage bolt, GR5
4	1045012RP	2	Spring link	15	14350 *	11	3/8 NC flanged lock nut
5	1032100RP	1	Spring, comp 3.25 x .56 x 7.3 x 1113	16	1041087 *	2	1/4 NC x 1 button head screw, GR5
6	1039950	2	Adjustable link	17	W70065 *	2	1/4 NC whiz nut
7	24611	1	SMV emblem	18	1285 *	2	1/4 x 1-1/2 cotter pin
8	-----	4	Tire & hub (see page 67)	19	1043432 *	10	Zerk, 1/4 drive type
9	1044844	3	1.0 x 4.31 Pin	20	W301104	2	3/8 NC x 1.5 carriage bolt GR5
10	1038100	8	1.0 x 3.84 Pin	21	1046094RP	1	SMV bracket
11	1044832	1	1.0 x 2.50 Pin				

* Standard Hardware, Obtain Locally
HHCS Hex Head Cap Screw

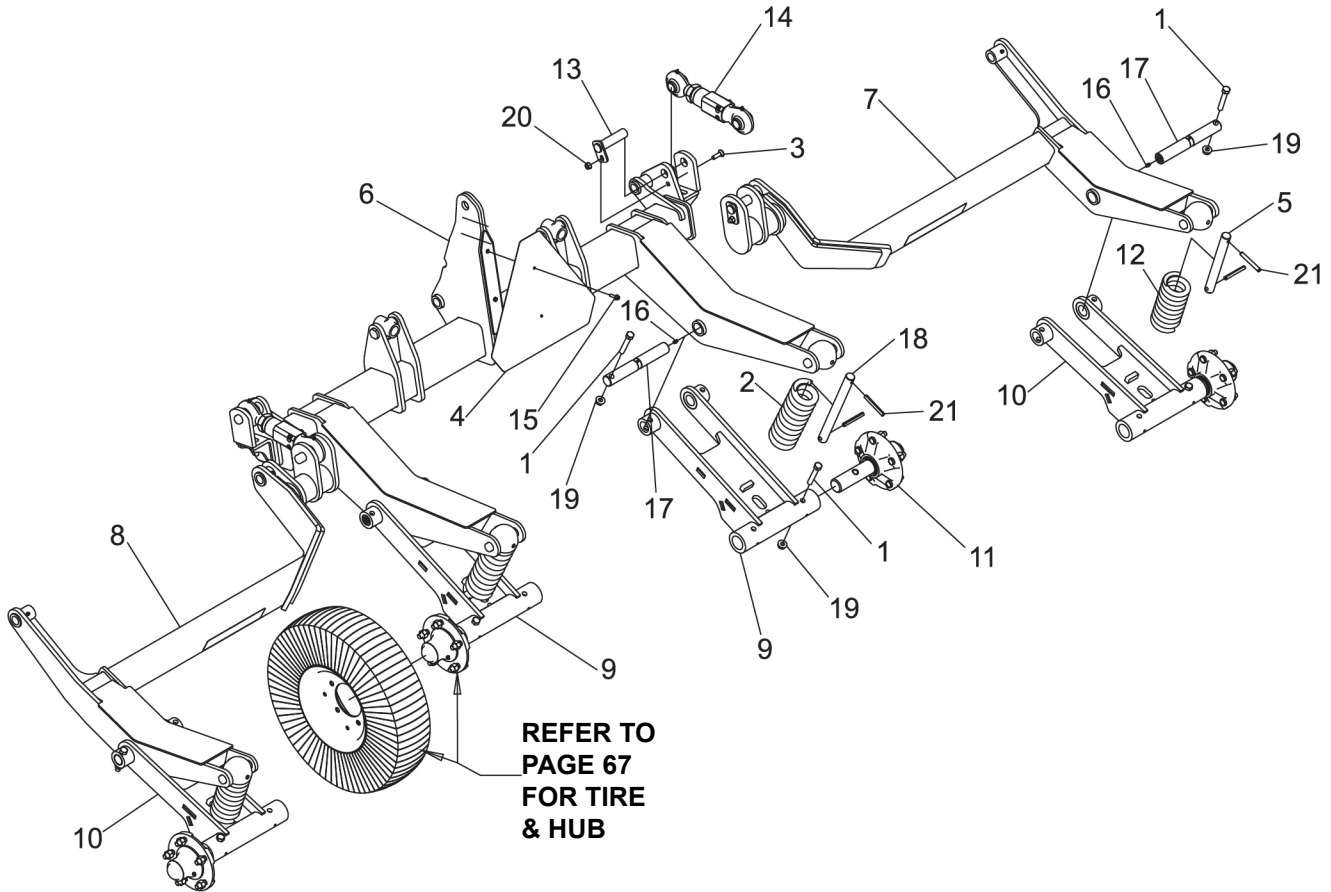
WHEEL ARM ASSEMBLY, SPRING ARM
PRIOR TO SERIAL NUMBER 10007668087004



REF	PART	QTY	DESCRIPTION
1	3489	8	HHCS 1/2 NC x 3 GR5 ZP
2	1046049	8	3/8 x 3 spirol pin
3	6697	3	Bolt, carriage 3/8 NC x 1 GR5 ZP
4	19710RP	2	SPR / CMP 82.6 mm x 17.5 mm x 241.9 mm
5	20973	2	Bolt, carriage 3/8 NC x 1-1/4 GR5
6	24611	1	Sign (SMV) slow moving vehicle
7	1032100RP	2	SPR / CMP 82.6 mm x 14.2 mm x 185.42 mm x 1113
8	1038100	8	WA, pin 1.0 x 3.94
9	1039950	2	Adjustable link, trunnion
10	1041087	2	Screw, button head, 1/4 NC x 1.0 patch
11	1044844	3	WA, pin 1.0 X 4.31

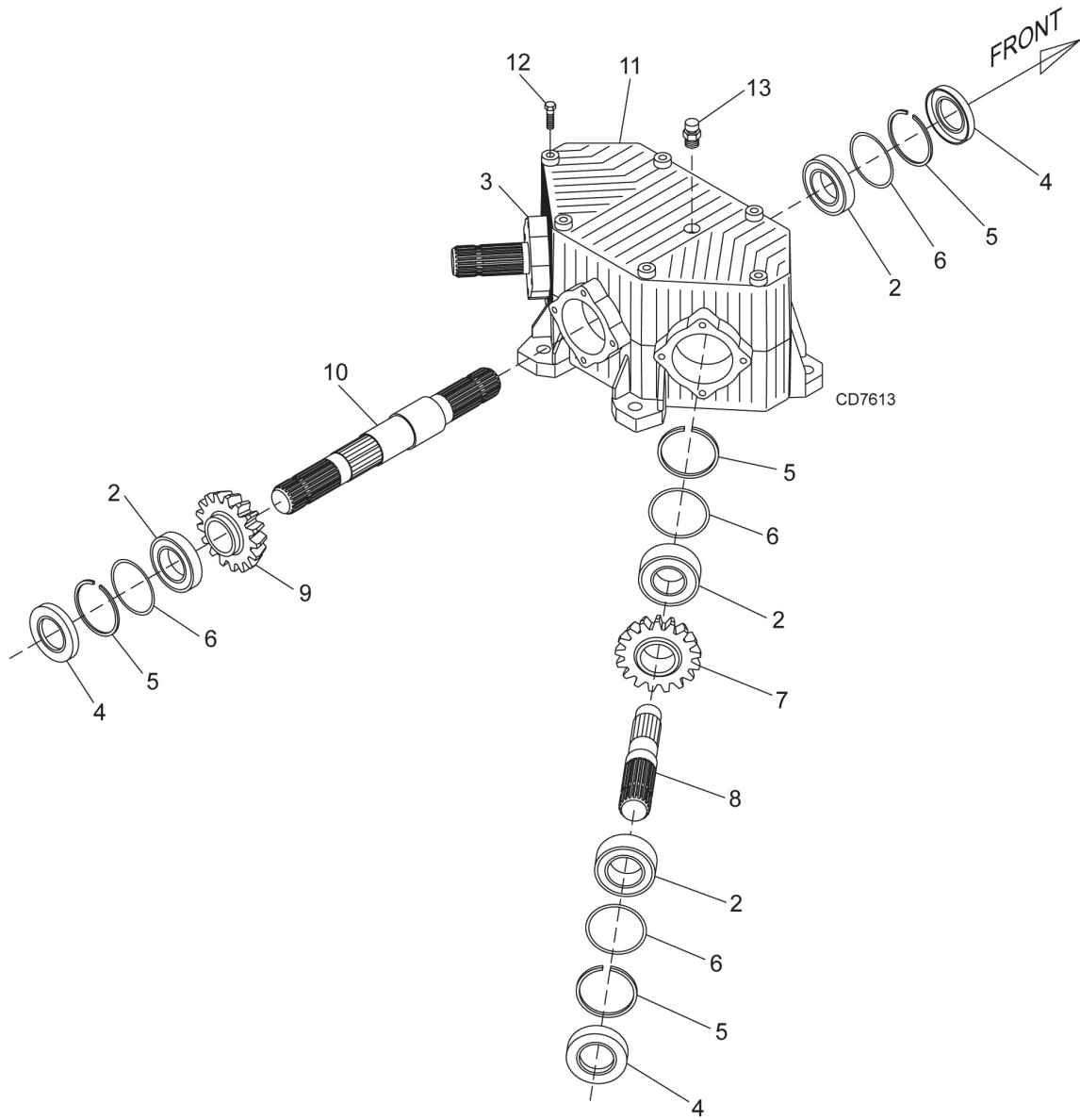
REF	PART	QTY	DESCRIPTION
12	1044863RP	1	WA, wheel arm, centre
13	1044864RP	1	WA, wheel arm, right
14	1044865RP	1	WA, wheel arm, left
15	1044895	4	Pin, 31.75 mm x 219.2 mm
16	1044932	2	Pin, 25.4 mm x 292.1 mm
17	1044933	2	Pin, 25.4 mm x 342.9 mm
18	1045000	2	Nut, 1/4-20 UNC blind hole, hex
19	1045624	8	Nut, HFN 1/2 NC, Dri-Loc patch
20	1045628	11	Nut, HFN 3/8 NC, Dri-Loc patch
21	1045692RP	2	WA, spring arm, right
22	1045693RP	2	WA, spring arm, left

**WHEEL ARM ASSEMBLY, SPRING ARM
AFTER SERIAL NUMBER 10007668087004**



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	3489	8	HHCS 1/2 NC x 3 GR5 ZP	12	1032100RP	2	Spring, compression 3.25 x .56 x 7.25 x 1113
2	19710RP	2	Spr/Comp 3.25 .69 9.52200	13	1038100	4	WA, pin 1.0 x 3.94
3	20973	4	Bolt, carriage 3/8 NC x 1-1/4 GR5	14	1039950	2	Adjustable link, trunnion
4	24611	1	Sign (SMV) slow moving vehicle	15	1041087	2	Screw, HFS-6 lobe, 1/4 NC x 1.0 GR5, patch
5	603837	2	Pin, 1.00 x 9.06	16	1043432	4	Zerk, 1/4 drive type
6	609595RP	1	WA, wheel arm, center	17	1044895	4	Pin, 1.25 x 9.13
7	609596RP	1	Asy, wheel arm RT	18	1044932	2	Pin, 1.00 x 11.50
8	609597RP	1	Asy, wheel arm LT	19	1045624	8	Nut, HFN 1/2 NC, Dri-Loc patch
9	609598RP	2	WA, spring arm, center	20	1045628	4	Nut, HFN 3/8 NC, Dri-Loc patch
10	609599RP	2	WA, spring arm, wing	21	1046049	8	Pin, spirol 3/8 x 3 hvy
11	1017050	4	Wheel, hub, 5 bolt				

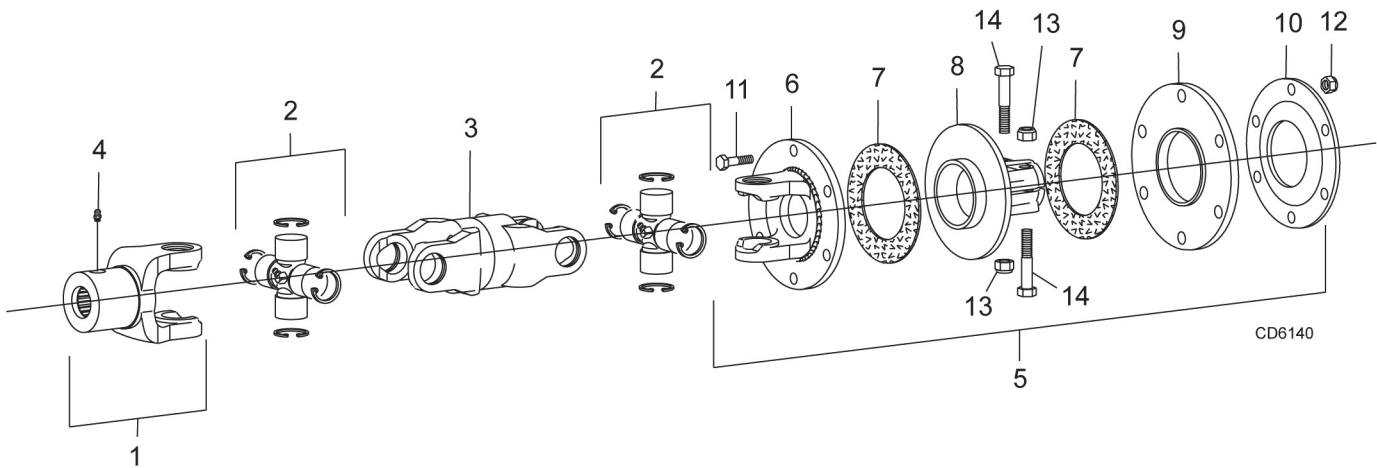
SPLITTER GEARBOX ASSEMBLY



REF	PART 540 RPM	PART 1000 RPM	QTY	DESCRIPTION
1	1031185	1031186	-	Complete splitter gearbox
2	39411	39411	6	Bearing
3	-----	-----	1	Housing
4	1031175	1031175	4	Oil seal, 45mm x 85mm x 10mm
5	1002494	1002494	6	Snap ring 85 mm dia
6	57471	57471	6	Shim
7	1031176	1031178	2	Pinion gear
8	1031177	1031177	2	Shaft 1-3/4 - 20 spline, wing
9	1031178	1031176	1	Gear
10	1031179	1031179	1	Shaft 1-3/4 - 20 spline, centre
11	1031180	1031180	1	Cover
12	-----	-----	*	M10 x 30mm HHCS CL8.8
13	57076	57076	1	1/2" breather

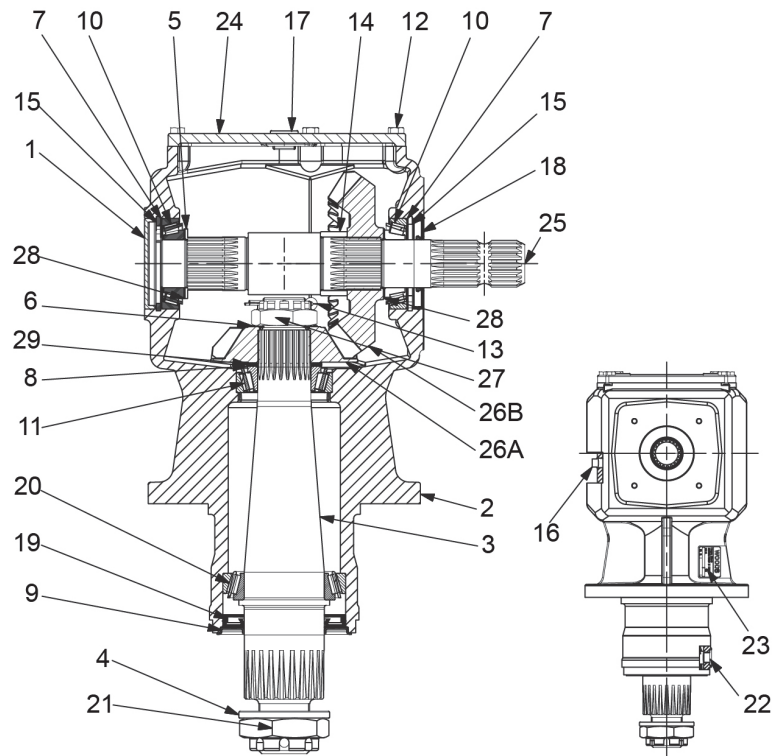
* Standard hardware, obtain locally

CENTRE DECK DRIVE ASSEMBLY



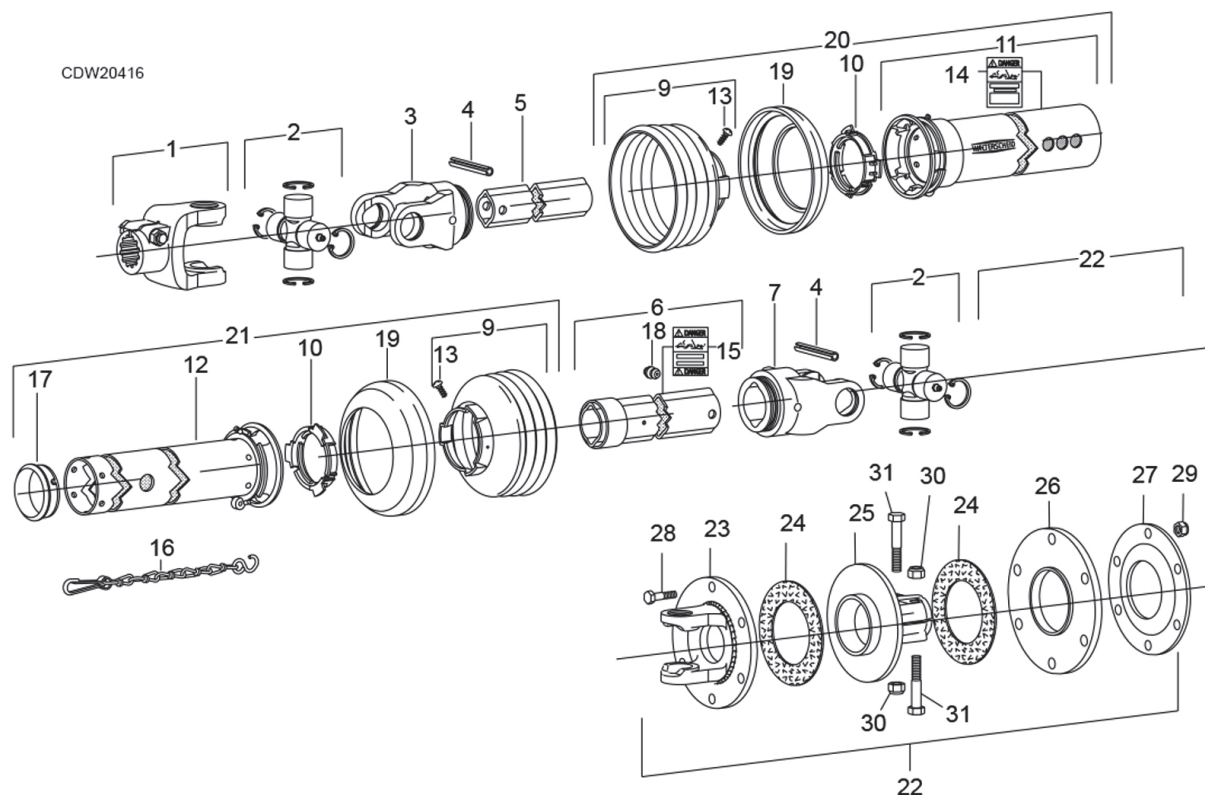
REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
A	1045076	1	Complete centre drive assembly	8	57440	1	Hub, 1-3/4, 20 spline
1	1031184	1	Yoke, 1-3/4, 20 spline	9	57434	1	Thrust plate
2	1045581	2	Cross & bearing kit	10	57439	1	Belleville spring plate
3	1019108	1	Double yoke	11	57259	6	M10 x 1.5P x 55 mm HHCS 8.8
4	1005521	1	Grease fitting	12	57260	6	M10 x 1.5P hex lock nut
5	1019114	1	Friction clutch 1340 1-3/4, 20 spline	13	57261	2	M12 x 1.75P hex lock nut
6	1027217	1	Flange yoke	14	57262	2	M12 x 1.75P x 65 mm HHCS 8.8
7	57432	1	Friction disc (package of 2)	15	1005508		Clutch repair kit (includes items 7, 10, 11, 12, 13 & 14)

WING & CENTRE GEARBOX ASSEMBLY



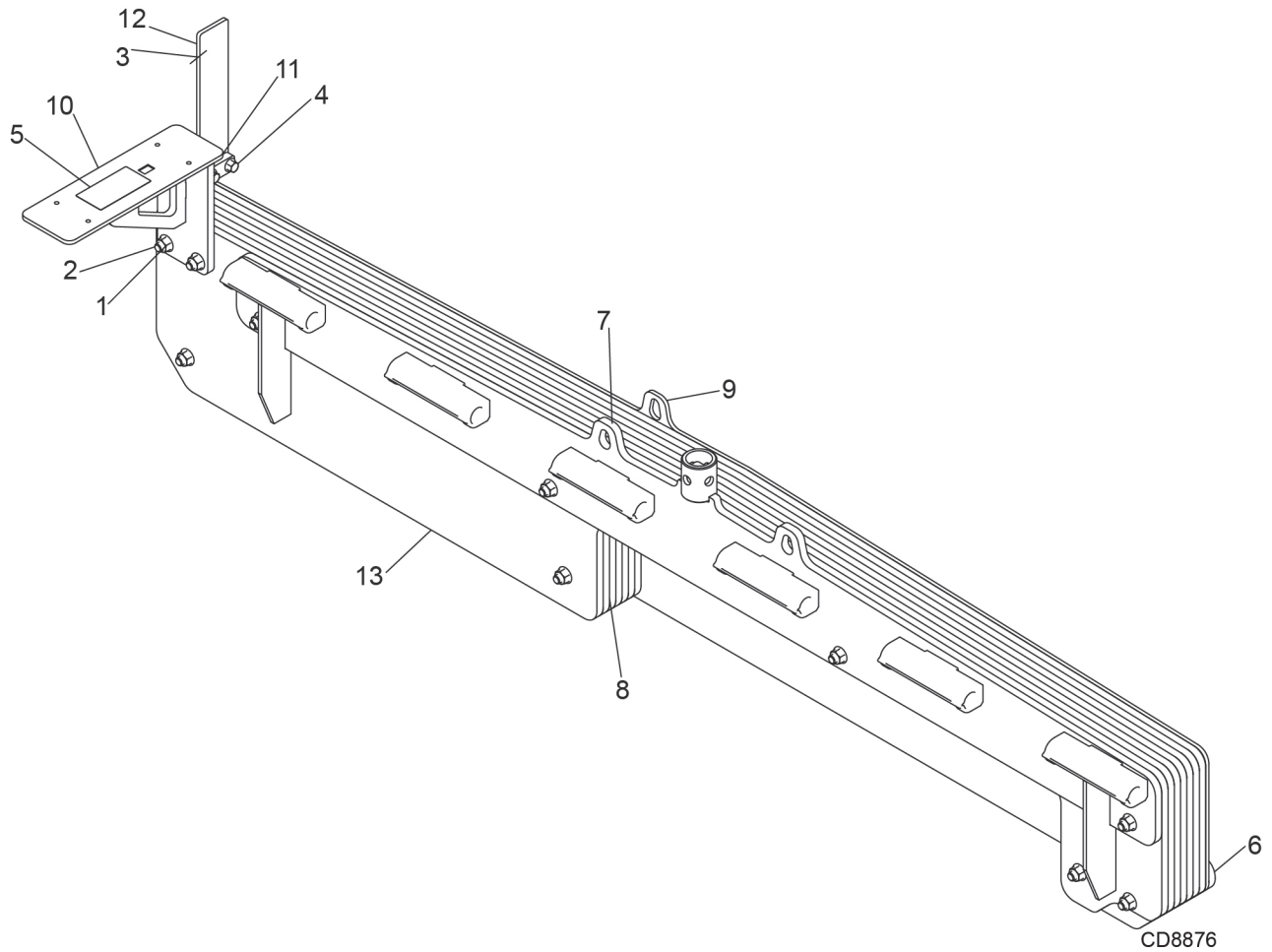
REF #	QTY	DESCRIPTION	CENTRE		RIGHT	LEFT
			540 RPM 617178RP	1000 RPM 617179RP	617180RP	617181RP
		Complete Box				
1	1	Cap 85 x 10	57371	57371	57371	57371
2	1	Housing	-	-	-	-
3	1	Output shaft	1045672	1045672	1045672	1045672
4	1	Blank washer 49 x 85 x 7	1045695	1045695	1045695	1045695
5	1	Shim 45.3 x 65.3 x 2.5	57471	57471	57471	57471 KIT
6	1	Shim 40.3 x 61.7 x 1.0	57471	57471	57471	57471 KIT
7	2	Shim kit 70.3 x 84.7	57471	57471	57471	57471 KIT
8	2	Shim kit 50.30 x 70.3	57471	57471	57471	57471 KIT
9	1	Seal protector	1045700	1045700	1045700	1045700
10	2	Taper roller bearing 30209	39411	39411	39411	39411
11	1	Bearing 322210	1025608	1025608	1025608	1025608
12	6	Bolt HHG M8 x 25	-	-	-	-
13	1	Cotter pin B5 x 60	-	-	-	-
14	1	Spacer 50 x 60 x 25	1045886	1045886	1045886	1045886
15	2	Snap ring hole D85 DIN472	1045887	1045887	1045887	1045887
16	1	Plug external 3/8" GAS	27326	27326	27326	27326
17	2	Plug 1/2" GAS	1045877	1045877	1045877	1045877
18	1	Dust lip oil seal 45 x 85 x 10	57318	57318	57318	57318
19	1	Oil seal NAK TCA3 NBR 75 x 115 x 12	1045888	1045888	1045888	1045888
20	1	Roller bearing 32015X	1045889	1045889	1045889	1045889
21	1	Castle nut M48 x 3	1045894	1045894	1045894	1045894
22	1	Magnetic plug 3/8	1045877	1045877	1045877	1045877
23	1	Name plate	-	-	-	-
24	1	Cover	1045895	1045895	1045895	1045895
25	1	Shaft	1045896	1045896	1045896	1045896
26	1	Bevel gear set	1043503	1043504	1043502	1043502
27	1	Castle nut M40 x 1.5	1045897	1045897	1045897	1045897
28	2	Shim 45.3 x 65.3 x 1.0	1045898	1045898	1045898	1045898
29	2	Shim 50.30 x 70.3 x 1.0	57471	57471	57471	57471 KIT
30	1	Dipstick breather plug	1045872	1045872	1045872	1045872
31	1	Cotter pin B8 x 90	-	-	-	-

WING DRIVE ASSEMBLY



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
A	1045077	1	Complete wing drive assembly	22	1019114	1	Friction clutch 1-3/4, 20 spline
1	1019111	1	Yoke 1 3/4" - 20 SPL. I.C.	23	1027217	1	Flange yoke
2	1045581	2	Cross & bearing Kit	24	57432	1	Friction disc (package of 2)
3	90317916	1	Inboard yoke 1B	25	57440	1	Hub, 1-3/4, 20 spline
4	40764	2	Spring pin 10 x 80	26	57434	1	Thrust plate
5	40587	1	Inner profile 1B	27	57439	6	Belleville spring plate
6	1045582	1	Profile & sleeve WA-2AL	28	57259	6	M10 x 1.5P x 55 mm HHCS
7	38353	1	Inboard yoke 2A	29	57260	6	M10 x 1.5P hex lock nut
9	-	2	Guard cone 4 rib	30	57261	2	M12 x 1.75P hex lock nut
10	40766	2	Bearing ring SC25	31	57262	2	M12 x 1.75P x 65 mm HHCS 8.8
11	-	1	Guard tube outer				N/S Not Serviced
12	-	1	Guard tube inner				
13	40778	2	Screw - in item 9				
14	18864	1	Decal outer - in item 11				
15	33347	1	Decal inner - in item 6				
16	40777	1	Restraint chain				
17	40767	1	Support bearing				
18	40779	1	Zerk - in item 6				
19	N/S	2	Reinforcing collar				
20	1045579	1	Outer guard half - includes items 9-11, 13, 14, 19				
21	1045580	1	Inner guard half - includes items 9, 10, 12, 13, 16, 17, 19				

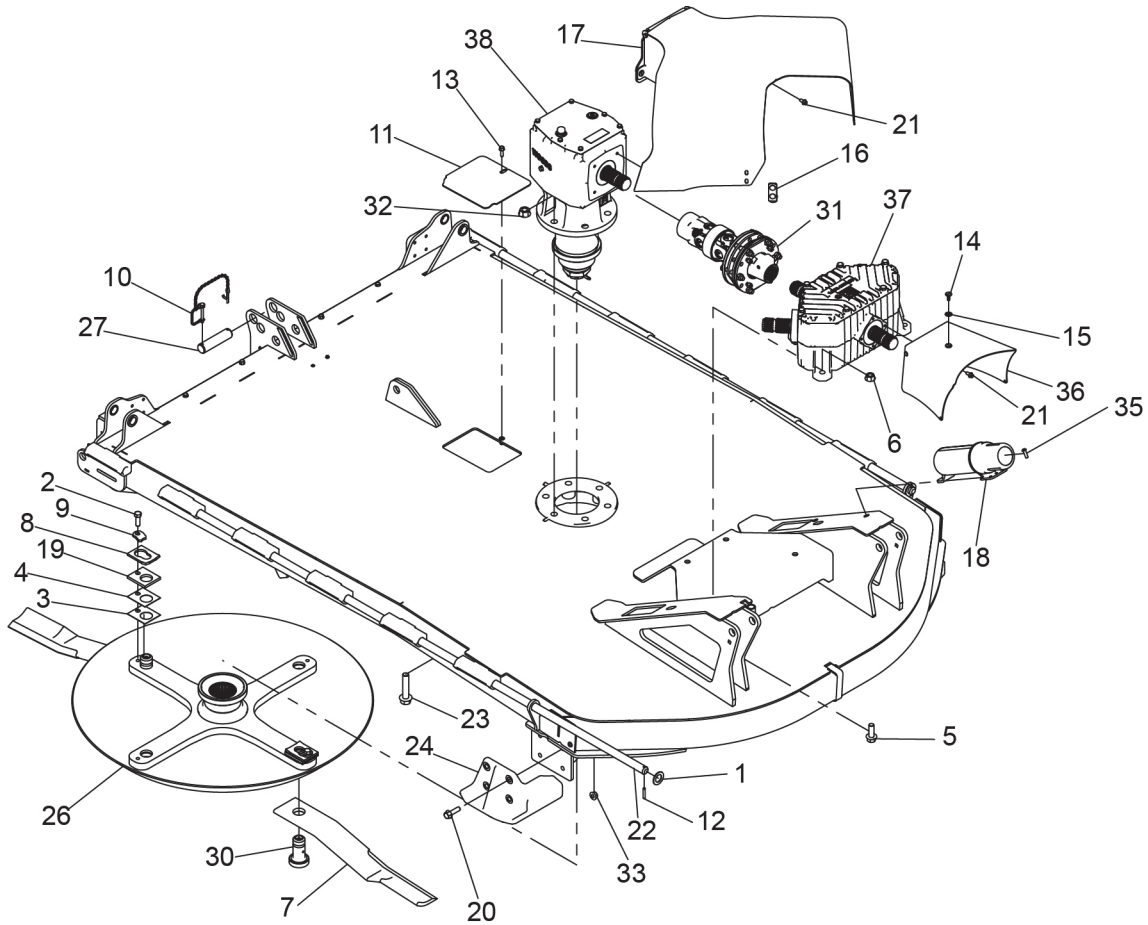
BW10.60E / BW10.60QE WEIGHT BOX ASSEMBLY



REF	PART	QTY	DESCRIPTION
1	13563	10	HHCS 1/2 NC x 6 GR5
2	57123	1	Decal 2 x 9 rear reflector
3	1033958	2	Screw .375 NC x 1 - .25 hex flange ser
4	1041910	1	Decal, notice, light kit
5	1045084RP	1	Plate, weight box skid
6	1045088RP	1	WA, weight box hinge
7	1045090RP	4	Plate, weight box inner
8	1045091RP	1	Plate, weight box outer
9	1045095RP	1	WA, weight box mount
10	1045624	10	Nut, HFN 1/2 NC, Dri-Loc patch
11	1045628	2	Nut, HFN 3/8 NC, Dri-Loc patch
12	1045879RP	4	Plate, weight box inner 70
13	1045883RP	1	Lug, weight box reflector
14	1046095RP	1	Plate, weight box inner notch

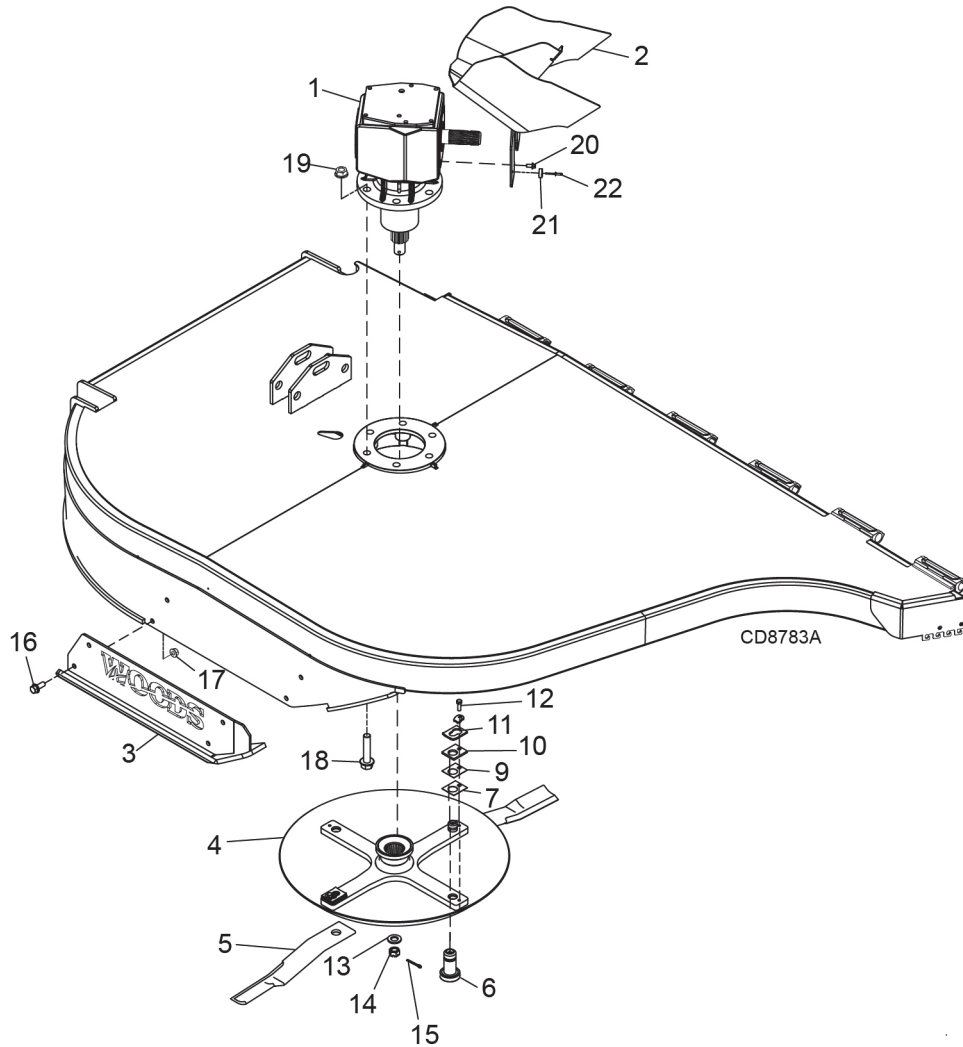
HHCS Hex head cap screw

CENTRE FRAME ASSEMBLY



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1863	2	Washer 1 SAE Flat	27	1044831	1	Screw, HFS, M8 - 1.25 x 16 CL8.8, patch
2	3379	2	HHCS 1/2 NC x 1-1/2 GR5 ZP	28	1045000	19	Nut, 1/4 - 20 UNC blind hole, hex
3	10520RP	2	18 GA 1-1/2 blade pin shim	29	1045003	3	Nut, 5/16 - 18 UNC blind hole, hex
4	13946RP	2	20 GA 1-1/2 blade pin shim	30	1045035RP	2	Pin, blade, DRL, 2.39
5	19024	4	HFS 5/8 NC x 1-3/4 GR5	31	1045078	1	DRV, 2JT FXD - 2400A 1.75 - 20,3.4CL
6	19025	4	Nut, HFN 5/8 NC, Dri-Loc patch	32	1045611	6	Nut, HFN 3/4 NC, Dri-Loc patch
7	19160KT	1	Kit, blade, 19160 STD	33	1045624	8	Nut, HFN 1/2 NC, Dri-Loc patch
8	32603RP	2	Keyhole plate special	34	1045813	1	Nut, No. 10 - 24 blind hole
9	32604RP	2	Blade pin lock clip spec	35	1046050	2	Screw, BTN HD 5/16 NC x 1.0
10	52204	1	Asy - lynch pin, chain & cotter	36	1046056RP	1	WA, shield, front, CE
11	57050RP	1	Link Bent .14 x 9.00 x 7.84	37	1031185	1	Gearbox repair 1:1.35 / 1:1 (540 RPM)
12	66016	4	1/4 x 1-1/2 spirol pin	37	1031186	1	Gearbox repair 1.35:1 / 1:1 (1000 RPM)
13	71632	1	Bolt whiz hex .312 - 18 x 1	38	617178RP	1	Gearbox repair 1.158:1 CCW (540 RPM)
14	603778	3	Screw, captured 8 mm	38	617179RP	1	Gearbox repair 1:1.6 CCW (1000 RPM)
15	603780	3	Washer, 8 mm				
16	611381RP	2	Asy, center shield magnet				NOT SHOWN
17	611442RP	1	WA, center shield, large, CE	1045874			Complete decal set
18	602651	1	Canister, manual, Europe	1045875			English safety decal set
19	1028824RP	2	Spacer, 5/16 thick blade pin	605877			French safety decal set
20	1028902	8	HFS 1/2 NC x 1-3/4 GR8	605878			Spanish safety decal set
21	1041071	7	Screw, HFS, M8 - 1.25 x 16 CL8.8, patch	605879			Italian safety decal set
22	1043438	2	Pin, hinge	605880			German safety decal set
23	1043460	6	Screw, HFS, 3/4 NC x 3.5 GR5	615257			Czech safety decal set
24	1044390	1	Skid shoe RT	615258			Danish safety decal set
25	1044391	1	Skid shoe LT	615279			Finnish safety decal set
26	1044815RP	1	WA, crossbar, center, double	615286			Swedish safety decal set

WING ASSEMBLY



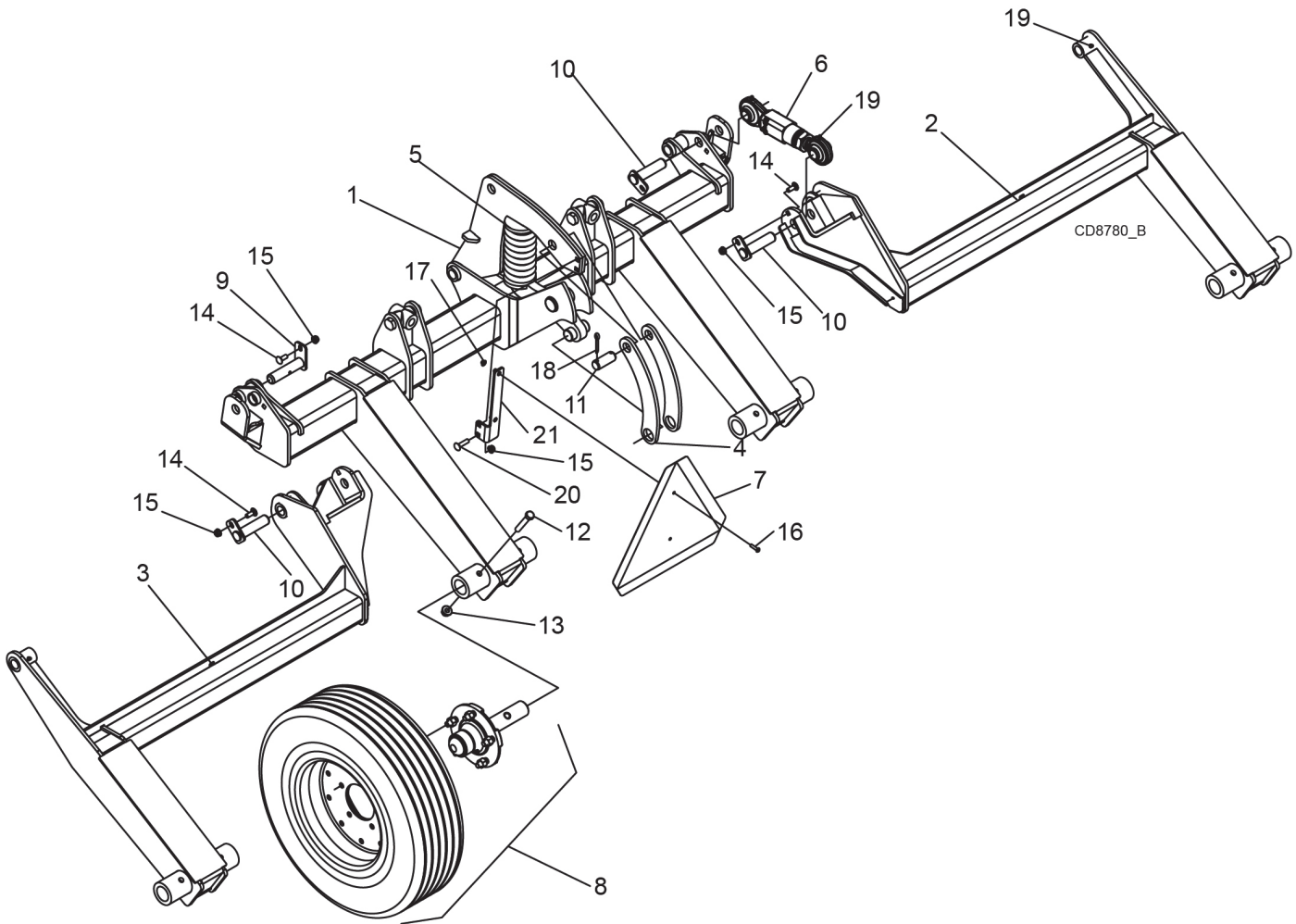
REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	617180RP	1	Gearbox, right wing (see page 55) -OR-	12	3379 *	2	1/2 NC x 1-1/2 HHCS, GR5
1	617181RP	1	Gearbox, left wing (see page 55)	13	1045695	1	Washer, 1.22 x 2.205 x .236
2	1046059RP	1	Clutch shield, hinged	14	1045894	1	M30 x 2.0P castle nut
3	1044990RP	1	Skid, right wing -OR-	15	6185 *	1	1/4 x 2-1/4 cotter pin
3	1044991RP	1	Skid, left wing	16	1031225	4	1/2 NC x 1-1/4 HFS, GR5
4	1044820RP	1	Crossbar assembly	17	11900 *	4	1/2 NC flanged lock nut
5	19160KT	1	Blade kit, CCW (right wing) -OR-	18	1043460	6	3/4 NC x 3-1/2 HFS, GR5
5	19161KT	1	Blade kit, CW (left wing)	19	1045611	6	3/4 NC flanged lock nut
6	1045034RP	2	1-1/2 blade pin	20	1041071	4	M8 - 1.25P x 16 MM HFS, CL8.8
7	10520RP	2	Shim, 18 GA, 1-1/2 blade pin	21	603778	2	8 mm screw
8	13946RP	2	Shim, 20 GA, 1-1/2 blade pin	22	603779	2	8 mm retainer
9	1028824RP	2	Spacer, 5/16 thick				
10	32603	2	Keyhole plate - special				
11	32604RP	2	Blade pin lock up - special				

* Standard hardware, obtain locally

HHCS Hex head cap screw

HFS Hex flange screw

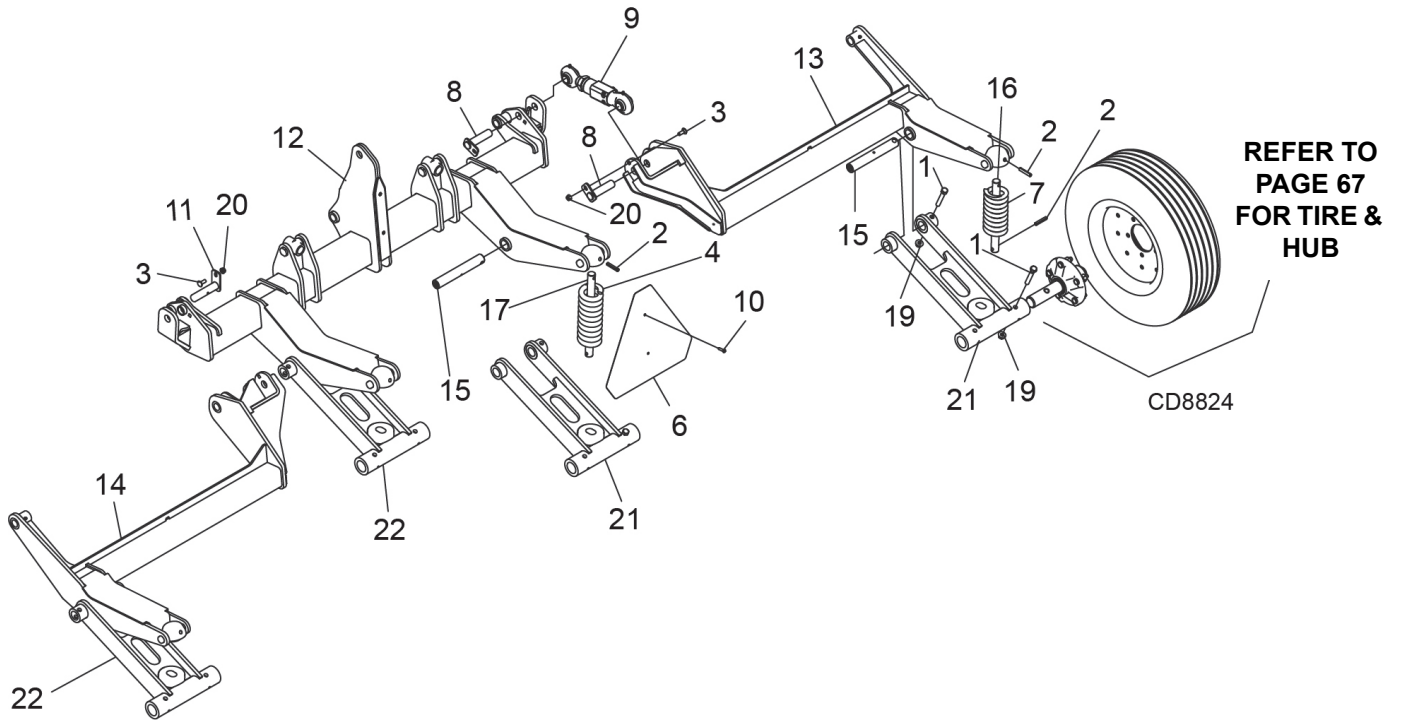
CENTRE WHEEL YOKE ASSEMBLY



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1044886RP	1	Wheel yoke, centre	12	3489 *	4	1/2 NC x 3 HHCS, GR5
2	1045008RP	1	Wheel yoke, right	13	11900 *	4	1/2 NC flanged lock nut
3	1045009RP	1	Wheel yoke, left	14	6697 *	11	3/8 NC x 1 carriage bolt, GR5
4	1045012RP	2	Spring link	15	14350 *	11	3/8 NC flanged lock nut
5	1032100RP	1	Spring, compression 82.6mm x 14.2mm x 185mm x 1113	16	1041087 *	2	1/4 NC x 1 button head screw, GR5
6	1039950	2	Adjustable link	17	W70065 *	2	1/4 NC whiz nut
7	24611	1	SMV emblem	18	1285 *	2	1/4 x 1-1/2 cotter pin
8	-----	4	Tire & hub (see page 67)	19	1043432 *	10	Zerk, 1/4 drive type
9	1044844	3	25 mm x 109 mm Pin	20	W301104	2	3/8 NC x 1.5 carriage bolt GR5
10	1038100	8	25 mm x 98 mm Pin	21	1046094RP	1	SMV bracket
11	1044832	1	25 mm x 64 mm Pin				

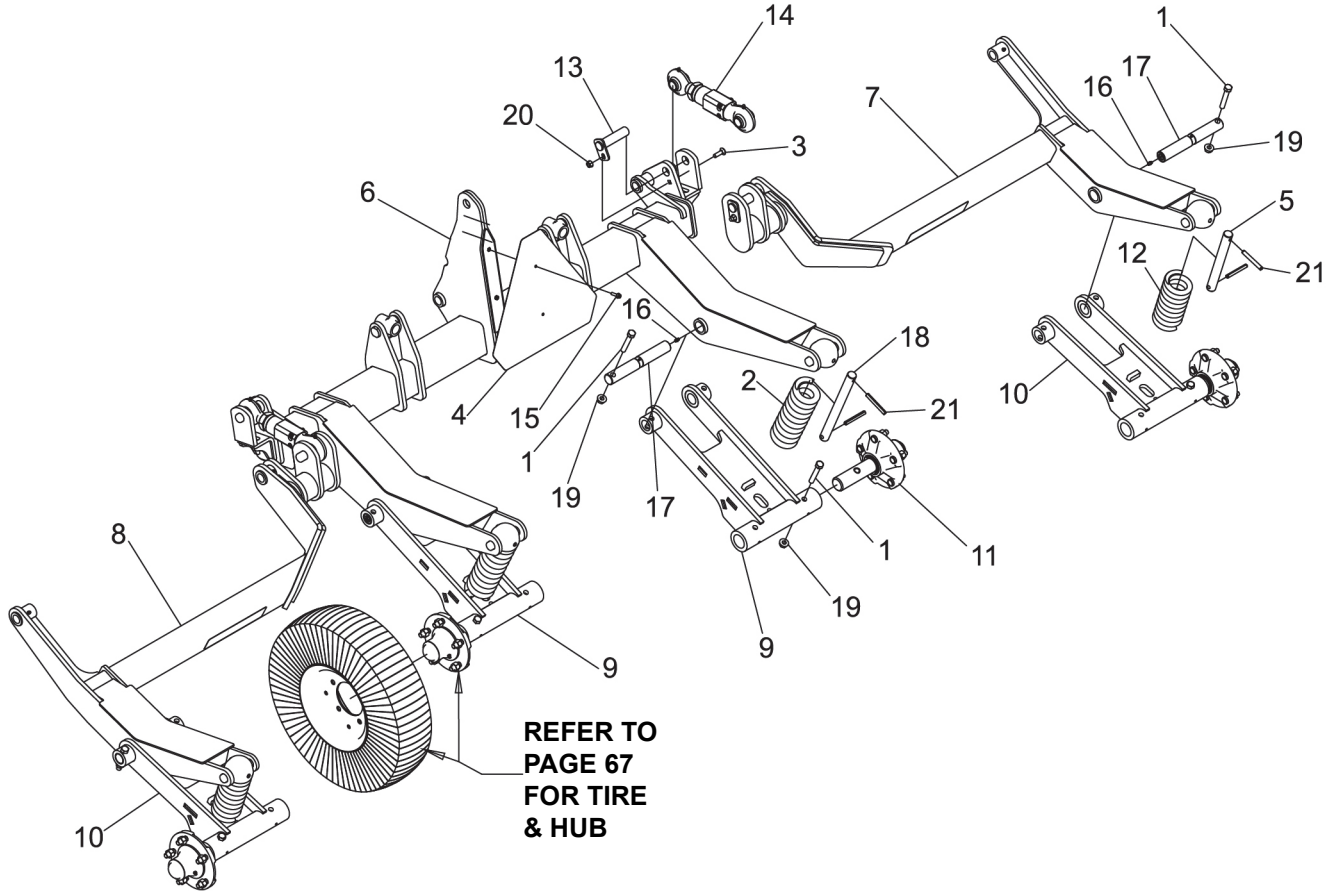
* Standard Hardware, Obtain Locally
HHCS Hex Head Cap Screw

WHEEL ARM ASSEMBLY, SPRING ARM
PRIOR TO SERIAL NUMBER 10007668087004



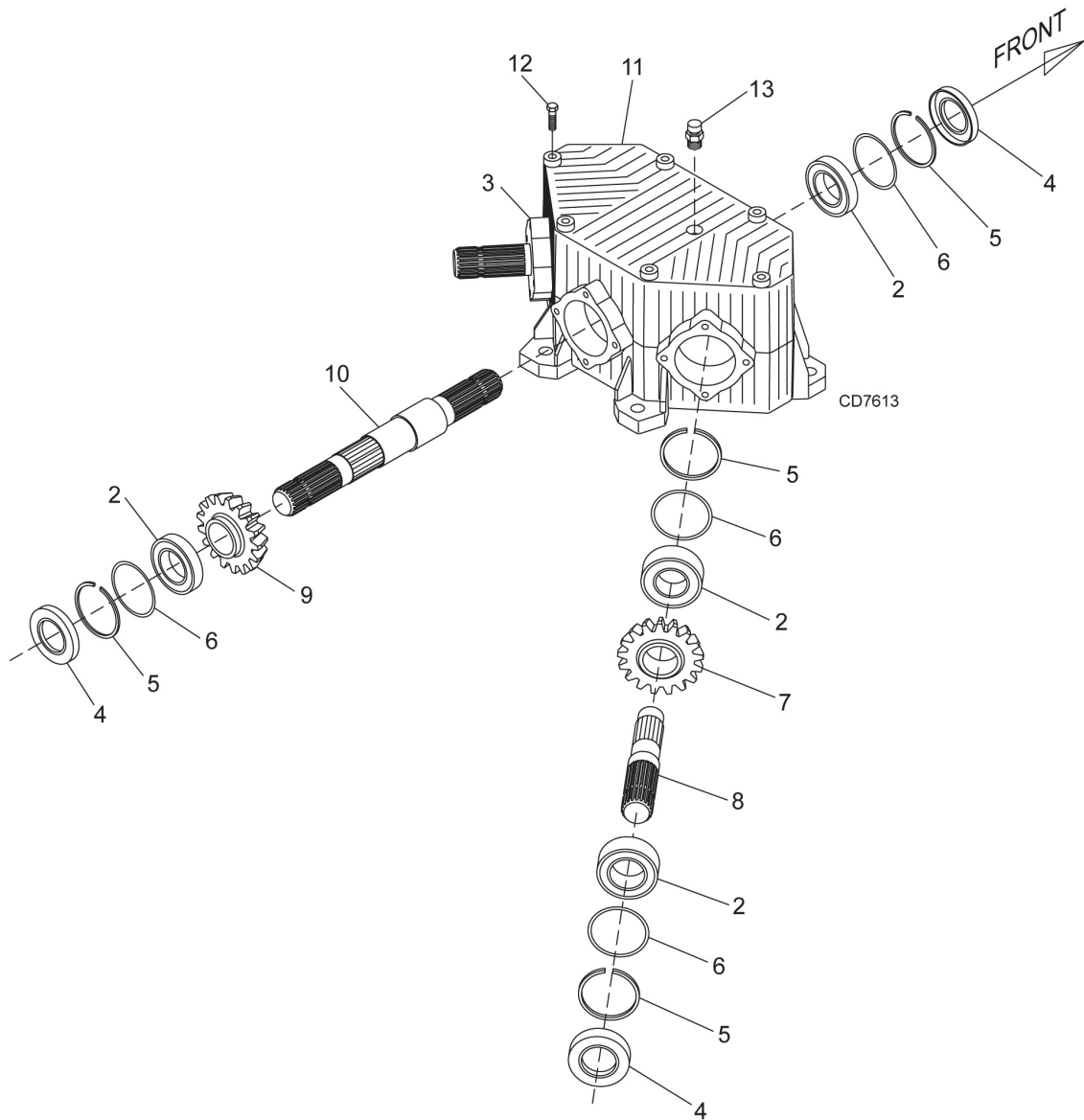
REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	3489	8	HHCS 1/2 NC x 3 GR5 ZP	12	1044863RP	1	WA, wheel arm, centre
2	1046049	8	3/8 x 3 spirol pin	13	1044864RP	1	WA, wheel arm, right
3	6697	3	Bolt, carriage 3/8 NC x 1 GR5 ZP	14	1044865RP	1	WA, wheel arm, left
4	19710RP	2	Spring / comp 82.6 mm x 17.5 mm x 241.3 mm, 2200	15	1044895	4	Pin, 31.75 x 219.2
5	20973	2	Bolt, carriage 3/8 NC x 1-1/4 GR5	16	1044932	2	Pin, 25.4 x 292.1
6	24611	1	Sign (SMV) slow moving vehicle	17	1044933	2	Pin, 25.4 x 342.9
7	1032100RP	2	Spring / comp 3.25 x 356 x 7.3 x 1113	18	1045000	2	Nut, 1/4-20 UNC blind hole, hex
8	1038100	8	WA, pin 1.0 x 3.94	19	1045624	8	Nut, HFN 1/2 NC, Dri-Loc patch
9	1039950	2	Adjustable link, trunnion	20	1045628	11	Nut, HFN 3/8 NC, Dri-Loc patch
10	1041087	2	Screw, button head, 1/4 NC x 1.0 patch	21	1045692RP	2	WA, spring arm, right
11	1044844	3	WA, pin 1.0 X 4.31	22	1045693RP	2	WA, spring arm, left

WHEEL ARM ASSEMBLY, SPRING ARM
AFTER SERIAL NUMBER 10007668087004



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	3489	8	HHCS 1/2 NC x 3 GR5 ZP	12	1032100RP	2	Spring, compression 3.25 x .56 x 7.25 x 1113
2	19710RP	2	Spring / Comp 3.25 .69 9.52200	13	1038100	4	WA, pin 1.0 x 3.94
3	20973	4	Bolt, carriage 3/8 NC x 1-1/4 GR5	14	1039950	2	Adjustable link, trunnion
4	24611	1	Sign (SMV) slow moving vehicle	15	1041087	2	Screw, HFS-6 lobe, 1/4 NC x 1.0 GR5, patch
5	603837	2	Pin, 1.00 x 9.06	16	1043432	4	Zerk, 1/4 drive type
6	609595RP	1	WA, wheel arm, centre	17	1044895	4	Pin, 1.25 x 9.13
7	609595RP	1	Asy, wheel arm, right	18	1044932	2	Pin, 1.00 x 11.50
8	609597RP	1	Asy, wheel arm, left	19	1045624	8	Nut, HFN 1/2 NC, Dri-Loc patch
9	609598RP	2	WA, spring arm, centre	20	1045628	4	Nut, HFN 3/8 NC, Dri-Loc patch
10	609599RP	2	WA, spring arm, wing	21	1046049	8	Pin, spiroloc 3/8 x 3 hvy
11	1017050	4	Wheel, hub, 5 Bolt				

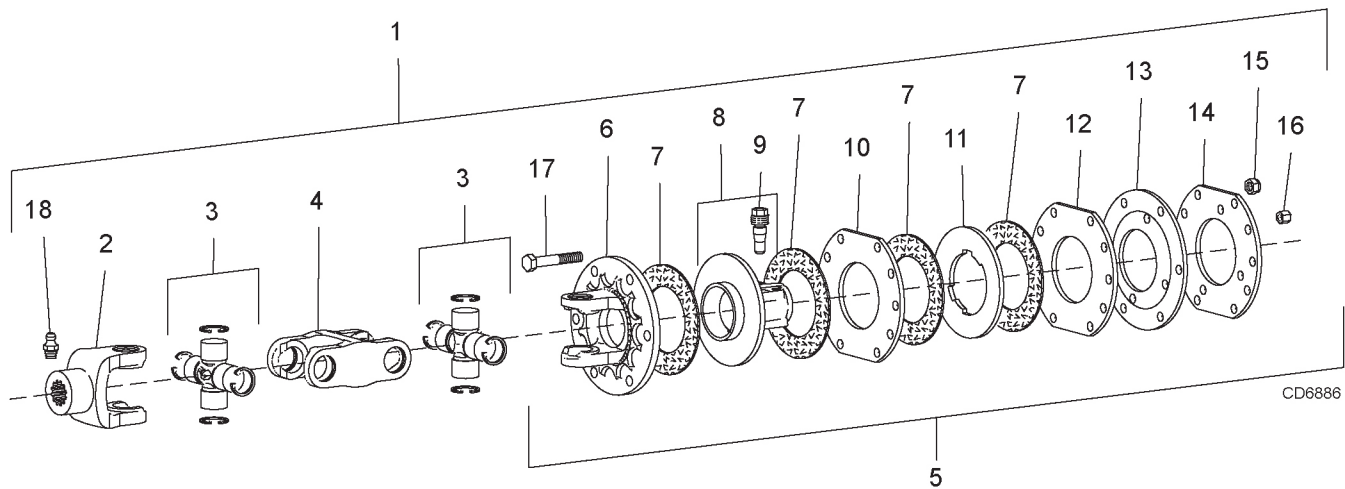
SPLITTER GEARBOX ASSEMBLY



REF	PART 540 RPM	PART 1000 RPM	QTY	DESCRIPTION
1	1031185	1031186	-	Complete splitter gearbox
2	39411	39411	6	Bearing
3	-----	-----	1	Housing
4	1031175	1031175	4	Oil seal, 45 mm x 85 mm x 10 mm
5	1002494	1002494	6	Snap ring 85 mm dia
6	57471	57471	6	Shim
7	1031176	1031178	2	Pinion gear
8	1031177	1031177	2	Shaft 1-3/4 - 20 spline, wing
9	1031178	1031176	1	Gear
10	1031179	1031179	1	Shaft 1-3/4 - 20 spline, centre
11	1031180	1031180	1	Cover
12	-----	-----	*	M10 x 30mm HHCS CL8.8
13	57076	57076	1	1/2" breather

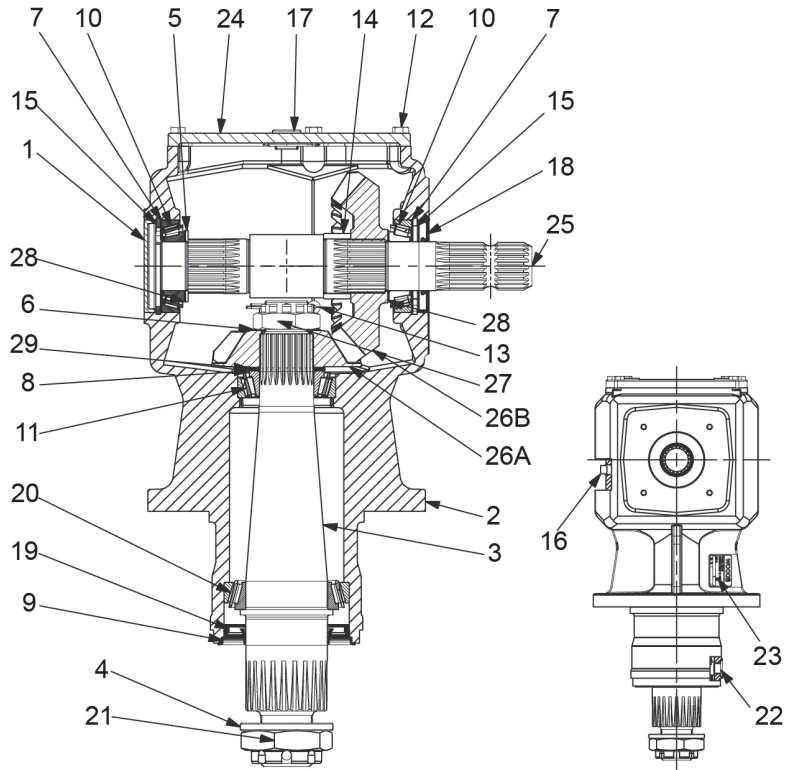
* Standard hardware, obtain locally

CENTRE DECK DRIVE ASSEMBLY



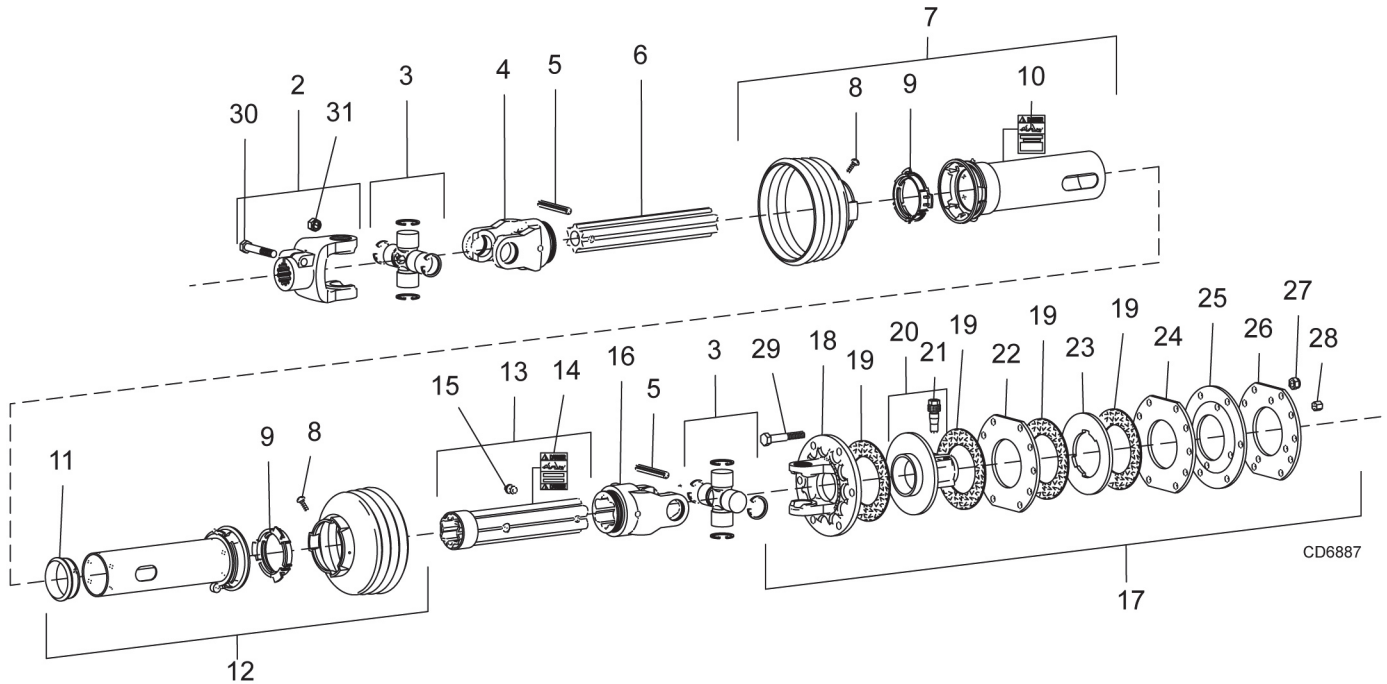
REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1045078	-	Complete center drive assembly	11	1016491	1	Drive plate
2	1019107	1	Yoke, 1-3/4, 20 spline	12	1016494	1	Thrust plate
3	1045881	2	Cross & bearing kit	13	1016492	1	Belleville spring
4	1019108	1	Double yoke	14	1016493	1	Backup plate
5	1016484	1	Friction clutch 2400 1-3/4, 20 spline (includes items 6 through 17)	15	57261	6	M12 x 1.75 hex lock nut w/ nylon insert
6	1016489	1	Flange yoke	16	1016495	4	M8 x 1.25 hex nut GR10
7	57432	4	Friction disc	17	1016496	6	M12 x 1.75 x 85 mm HHCS PC 8.8
8	1016490	1	Hub, 1-3/4, 20 spline (includes item 9)	18	1005521	1	Grease fitting
9	1016498	1	Lock assembly				
10	57443	1	Drive plate				

WING & CENTRE GEARBOX ASSEMBLY



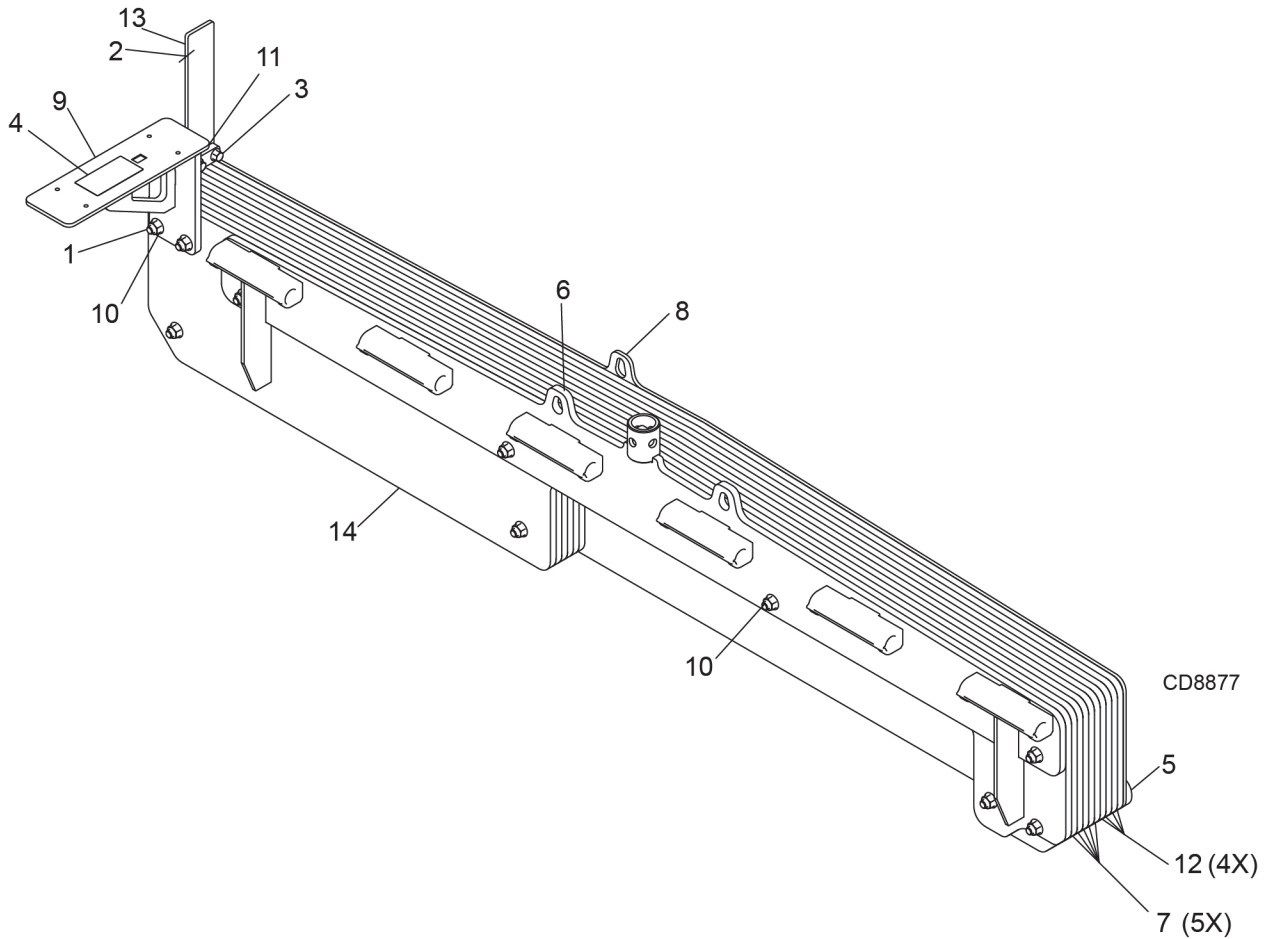
REF #	QTY	DESCRIPTION	CENTRE		RIGHT	LEFT
			540 RPM 617178RP	1000 RPM 617179RP	617180RP	617181RP
		Complete box				
1	1	Cap 85 x 10	57371	57371	57371	57371
2	1	Housing	-	-	-	-
3	1	Output shaft	1045672	1045672	1045672	1045672
4	1	Blank washer 49 x 85 x 7	1045695	1045695	1045695	1045695
5	1	Shim 45.3 x 65.3 x 2.5	57471	57471	57471	57471 KIT
6	1	Shim 40.3 x 61.7 x 1.0	57471	57471	57471	57471 KIT
7	2	Shim kit 70.3 x 84.7	57471	57471	57471	57471 KIT
8	2	Shim kit 50.30 x 70.3	57471	57471	57471	57471 KIT
9	1	Seal protector	1045700	1045700	1045700	1045700
10	2	Taper roller bearing 30209	39411	39411	39411	39411
11	1	Bearing 322210	1025608	1025608	1025608	1025608
12	6	Bolt HHG M8 x 25	-	-	-	-
13	1	Cotter pin B5 x 60	-	-	-	-
14	1	Spacer 50 x 60 x 25	1045886	1045886	1045886	1045886
15	2	Snap ring hole D85 DIN472	1045887	1045887	1045887	1045887
16	1	Plug external 3/8" GAS	27326	27326	27326	27326
17	2	Plug 1/2" GAS	1045877	1045877	1045877	1045877
18	1	Dust lip oil seal 45 x 85 x 10	57318	57318	57318	57318
19	1	Oil seal NAK TCA3 NBR 75 x 115 x 12	1045888	1045888	1045888	1045888
20	1	Roller bearing 32015X	1045889	1045889	1045889	1045889
21	1	Castle nut M48 x 3	1045894	1045894	1045894	1045894
22	1	Magnetic plug 3/8	1045877	1045877	1045877	1045877
23	1	Name plate	-	-	-	-
24	1	Cover	1045895	1045895	1045895	1045895
25	1	Shaft	1045896	1045896	1045896	1045896
26	1	Bevel gear set	1043503	1043504	1043502	1043502
27	1	Castle nut M40 x 1.5	1045897	1045897	1045897	1045897
28	2	Shim 45.3 x 65.3 x 1.0	1045898	1045898	1045898	1045898
29	2	Shim 50.30 x 70.3 x 1.0	57471	57471	57471	57471 KIT
30	1	Dipstick breather plug	1045872	1045872	1045872	1045872
31	1	Cotter pin B8X90	-	-	-	-

WING DRIVE ASSEMBLY



REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1045079	--	Complete wing drive assembly	16	40751	1	Inboard yoke
2	1004957	1	Yoke, 1-3/4, 20 spline (includes items 30, 31)	17	1019109	1	Friction clutch 2500 1-3/4, 20 spline (includes items 18 through 29)
3	1045583	2	Cross & bearing kit	18	1041695	1	Flange yoke
4	40750	1	Inboard yoke	19	57432	4	Friction disc
5	40765	2	Spring pin 10 x 90	20	1016490	1	Hub, 1-3/4, 20 spline (includes item 21)
6	40752	1	Inner profile	21	1016498	1	Lock assembly
7	1045585	1	Outer guard half (includes items 8, 9, 10)	22	57443	1	Drive plate
8	40778	2	Screw	23	1016491	1	Drive plate
9	40766	2	Bearing ring SC25	24	1016494	1	Thrust plate
10	18864	1	Decal, danger rotating driveline	25	1016492	1	Belleville spring
11	40767	1	Support bearing	26	1016493	1	Backup plate
12	1045586	1	Inner guard half (includes items 8, 9, 11)	27	57261	6	M12 x 1.75 hex lock nut w/ nylon insert
13	1045584	1	Outer profile & sleeve (includes items 14, 15)	28	1016495	4	M8 x 1.25 Hex nut GR10
14	33347	1	Decal, danger guard missing	29	1016496	6	M12 x 1.75 x 85 mm HHCS PC 8.8
15	40779	1	Grease fitting	30	1001042	1	M16 x 2.0 x 90 mm HHCS PC 8.8
				31	1005522	1	M16 x 2.0 Hex lock nut

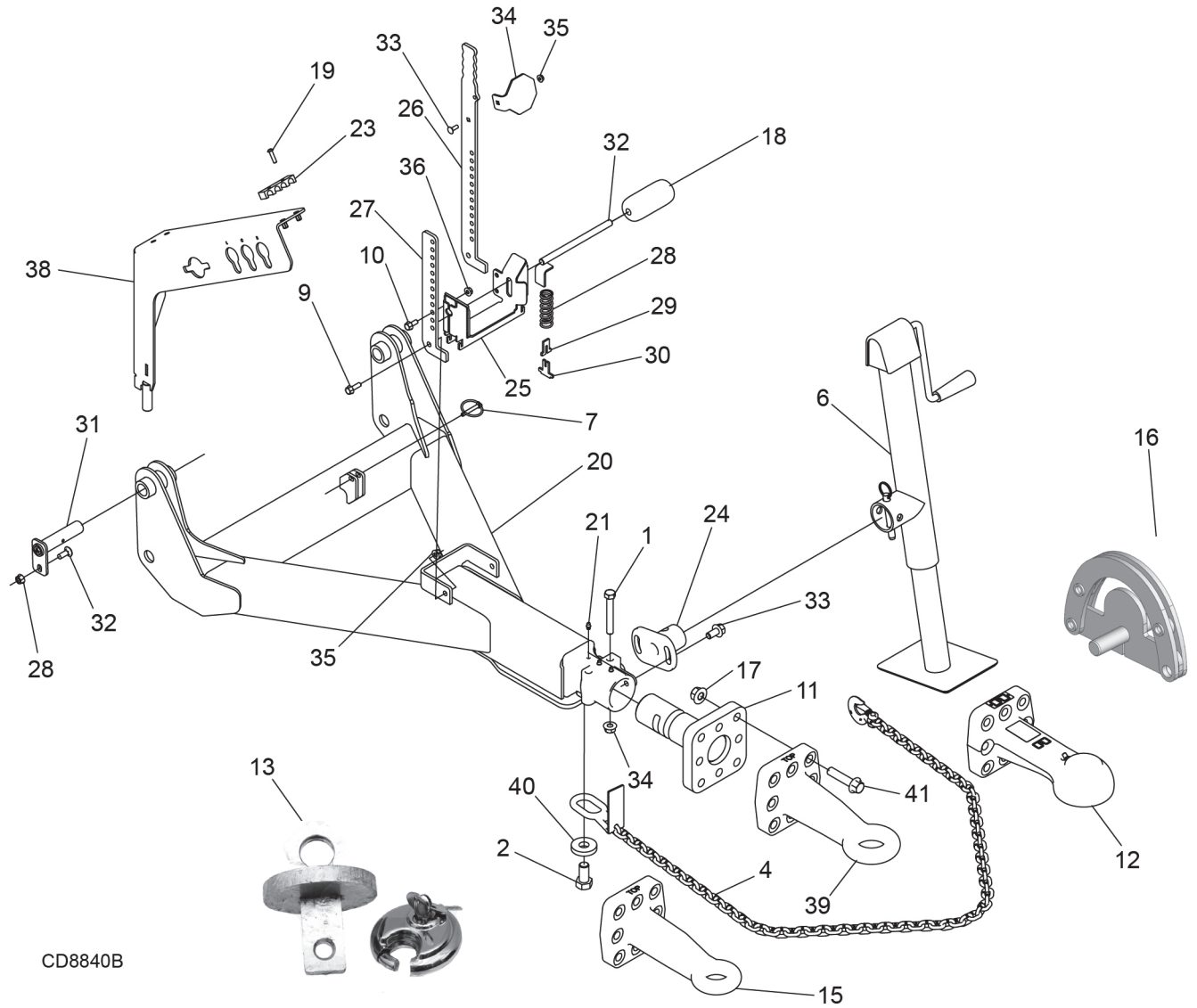
BW10.70E / BW10.70QE WEIGHT BOX ASSEMBLY



REF	PART	QTY	DESCRIPTION
1	22205	10	HHCS 1/2 NC x 6-1/2 GR5
2	57123	1	DCL 2 x 9 rear reflector
3	1033958	2	Screw .375 NC x 1-.25 hex flng ser
4	1041910	1	Decal, notice, light kit
5	1045084RP	1	Plate, weight box skid
6	1045088RP	1	WA, weight box hinge
7	1045090RP	5	Plate, weight box inner
8	1045091RP	1	Plate, weight box outer
9	1045095RP	1	WA, weight box mount
10	1045624	10	Nut, HFN 3/8 NC, Dri-Loc patch
11	1045628	2	Nut, HFN 3/8 NC, Dri-Loc patch
12	1045879RP	4	Plate, weight box inner 70
13	1045883RP	1	Lug, weight box reflector
14	1046095RP	1	Plate, weight box inner notch

HHCS Hex head cap screw

TONGUE ASSEMBLY



CD8840B

TONGUE ASSEMBLY

REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1637	2	HHCS 1/2 NC x 3-1/2 GR5 ZP	22	1044844	1	WA, pin 1.0 x 4.31
2	4616	1	HHCS 3/4 NC x 1-1/2 GR5 ZP	23	1044854	2	Clamp, hose, 4
3	6697	1	Bolt, carriage 3/8 NC x 1 GR5 ZP	24	1044899	1	Mount, jack
4	19407	1	Asy, safety chain, 10,000 LB	25	1044930	1	WA, spring lift
5	21937	1	Bolt, carriage 1/4 NC x 3/4	26	1045024	1	Link, CV lift arm
6	52232	1	Swivel parking jack	27	1045025	1	Link, CV lift
7	62043	1	1/4 x 1-3/4 klik pin	28	1045026	1	Spring, 1.0 x 3.0 - 65 LB
8	62521	1	Nut lock 1/4 NC flange	29	1045027	1	Link, spring
9	71632	1	Bolt whiz hex .312-18 x 1	30	1045028	1	Link, spring T
10	71851	2	HHCS .312 NC x 3/4 flange	31	1045029	1	Angle, spring
11	601978	1	WA, hitch, Europe	32	1045030	1	Pin, .50 x 7.63
12	603774	1	Coupler, ball K80	33	1045070	2	Screw, HFS, 1/2 NC x 1.0 GR5
13	603776	1	Lock, keyed	34	1045624	2	Nut, HFN 1/2 NC, Dri-Loc patch
14	603797	1	Lock, keyed padlock (not shown)	35	1045628	2	Nut, HFN 3/8 NC, Dri-Loc patch
15	603802	1	Coupler, towing eye 40 mm	36	1045655	2	Nut, HFN 5/16 NC, Dri-Loc patch
16	603836	1	Lock, keyed, ball coupler	37	1045818RP	1	Lug, stop
17	1027921	8	M16 x 2.0 flange nut CLS10	38	1046000	1	Asy, hose holder
18	1029865	1	Roller 2 x 4.38	39	1046031	1	Coupler, towing eye 50 mm
19	1041087	4	Screw, button head, 1/4 NC x 1.0, patch	40	W8424	1	Washer 3/4 ID 2 OD 3/8 thick
20	1043425	1	WA, tongue	41		* 8	FHCS M16 - 2.0 x 70 CL10.9
21	1043432	3	Zerk, 1/4 drive type				

* Standard Hardware, Obtain Locally

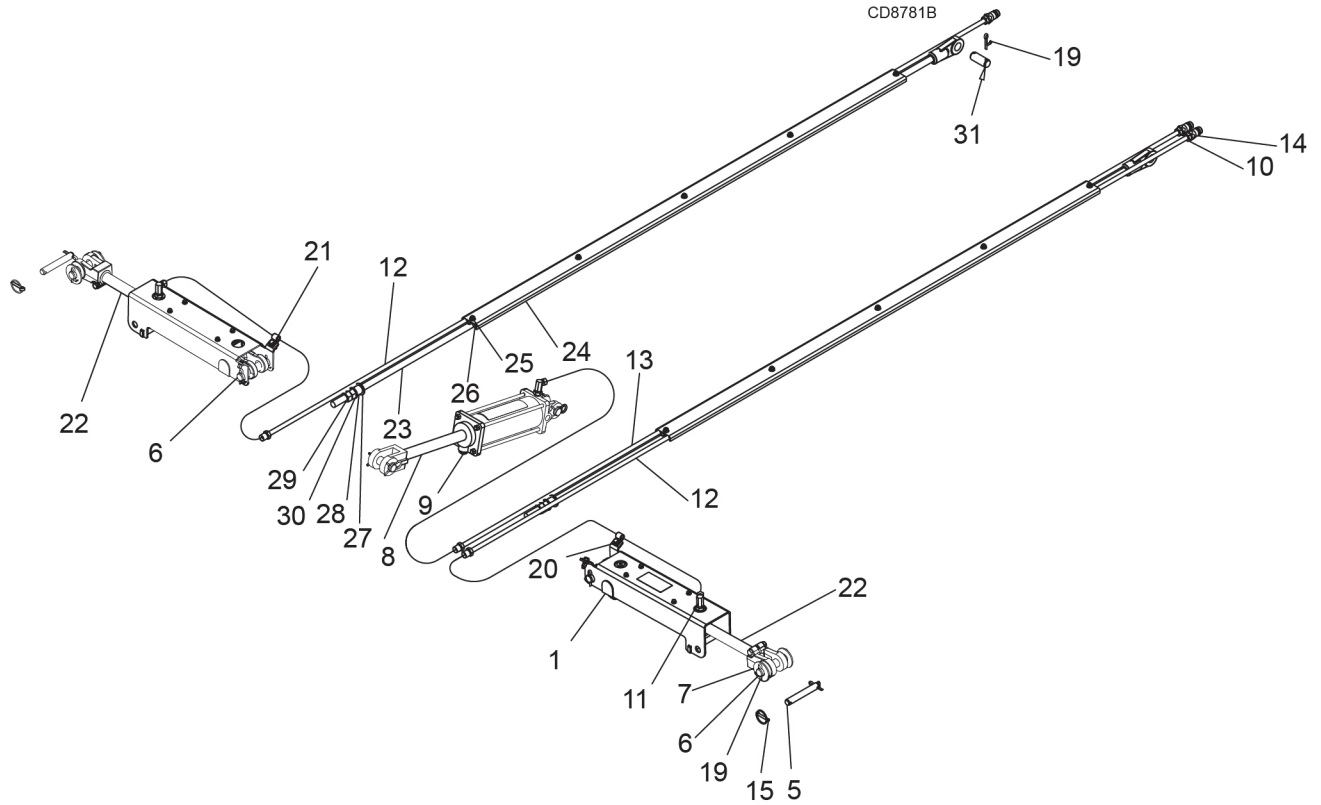
HHCS Hex Head Cap Screw

HFS Hex Flange Screw

HFN Hex Flange Nut

HT Heat Treated

CYLINDER ASSEMBLY

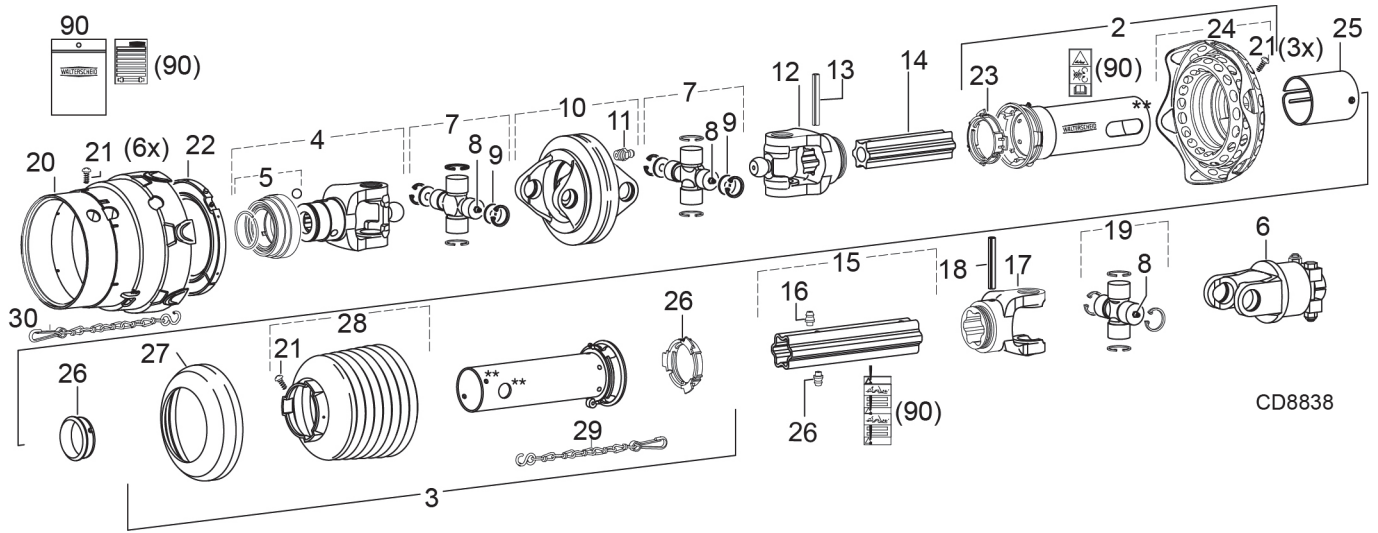


REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	1045815RP	2	Wing lock (for cylinder 597269 see page 69)	20	71632	2	Bolt .312 - 18 x 1
5	1045071	2	Pin 19 mm x 129 mm	21	78059	2	Clamp .50 dia steel cushion
6	8345	4	Pin 25 mm X 104 mm	22	597269	2	Cylinder, 3.0 x 1.25 x 10.0 NPT8
7	832	4	Washer 1"	23	1044814RP	2	Attitude rod, .75
8	10475	1	Hydraulic cylinder 3-1/2 x 8	23A	1045612RP	2	Attitude rod, 1.0 (for .60 & .70 Series)
9	11975	1	1/2 NPT vent plug	24	1045080RP	2	Hose cover channel
10	W11893	3	Adapter 1/4 NPTF 1/2 NPTM	25	1045655	10	Nut, HFN 5/16 NC, Dri-Loc patch
11	10290	3	1/4 x 1/4 90 elbow 1/16 restrictor	26	258	10	Feedline clamp - 1/2
12	52201	2	Hose .25 ID x .25 NPT x 264	27	57798	2	Washer 3/4 SAE flat hardened
13	11817	1	Hose .25 ID x .25 NPT x 230	27A	1863	4	Washer 1 SAE flat
14	66511	3	Male hydraulic coupler	28	1044862	2	Pipe 19 mm x 25 mm
15	52204	2	Lynch pin w/ chain	28A	33647	2	Pipe 1.0 x .75
19	1285	12	6.35 mm x 38.1 mm cotter pin	29	1450	4	Nut hex 3/4 NC plated
				30	2864	2	Washer 3/4"
				31	1044832	2	Pin 25 mm x 64 mm

* Standard Hardware, Obtain Locally

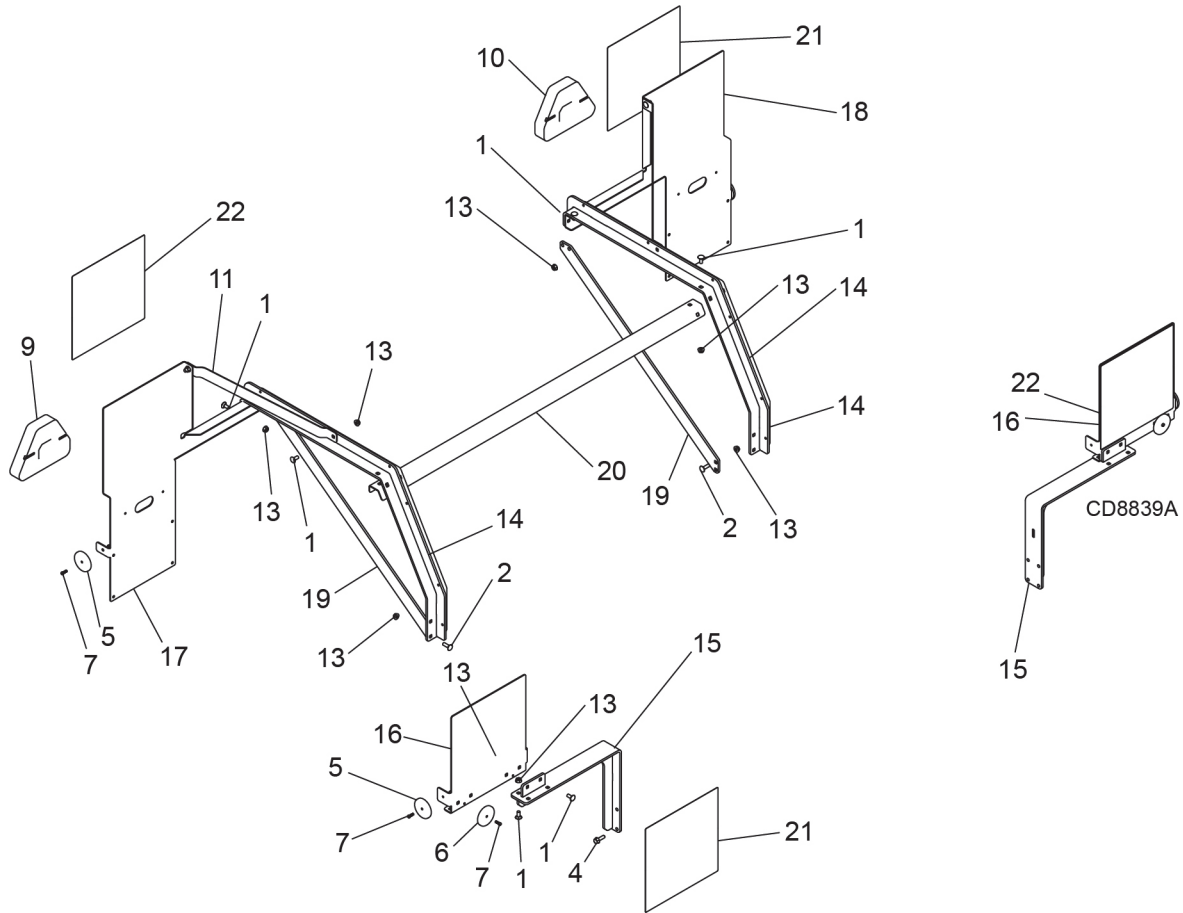
HHCS Hex Head Cap Screw

540 RPM & 1000 RPM FRONT CV DRIVE



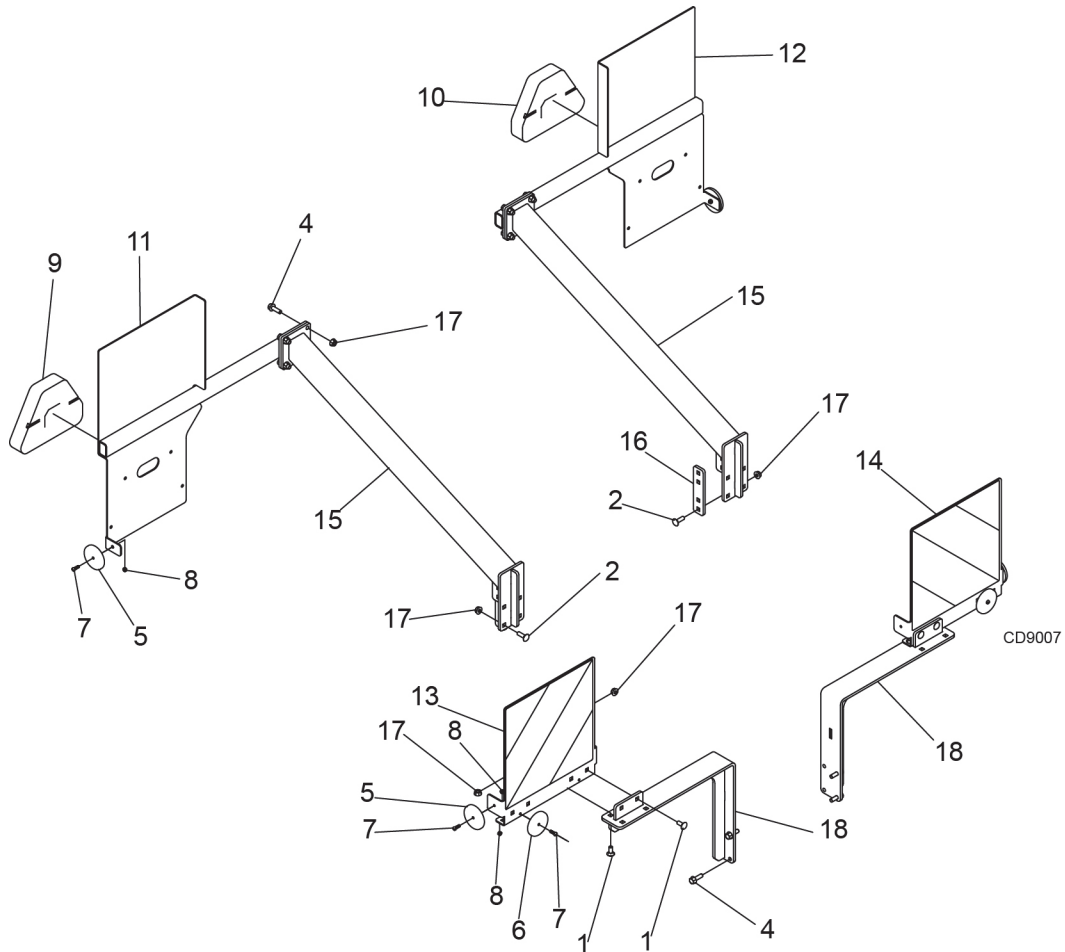
REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	602691	1	Complete CV drive asy (540 RPM)	19	1045583	1	Cross & bearing
1	602692	1	Complete CV drive as (1000 RPM)	20	603230	1	Guard cone
2	603224	1	Outer guard half	21	40778	1	Screw
3	603225	1	Inner guard half	22	603231	1	Bearing ring
4	603235	1	Yoke complete (1000 RPM)	23	40766	1	Bearing ring
4	603226	1	Yoke complete (540 RPM)	24	603232	1	Guard cone w/ flexible guard
5	603227	1	QS lock complete	25	603233	1	Cover
6	1029957	1	Yoke 1-1/2 20 spline	26	603234	1	Bearing ring
7	603229	1	Cross & bearing	27	603771	1	Reinforcing collar
8			Not serviced	28	603772	1	Guard cone
9			Not serviced	29	40777	1	Safety chain
10	57294	1	Double yoke w/ grease fitting	30	603773	1	Safety chain
11	1037779	1	Grease fitting	31	603770	1	Instruction manual w/ decals
12	1004967	1	Yoke, inboard				
13	40764	1	Spring pin, 10 x 90				
14	603768	1	Inner profile				
15	603769	1	Profile w/ grease fitting				
16	598672	1	Grease fitting				
17	40751	1	Yoke, inboard				
18	40765	1	Spring pin				
				†			Not shown
				HHCS			Hex Head Cap Screw
				*			Standard hardware, obtain locally

PLACARD AND LIGHT MOUNTS
PRIOR TO SERIAL NUMBER 10007668087004



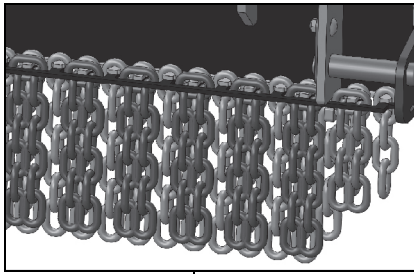
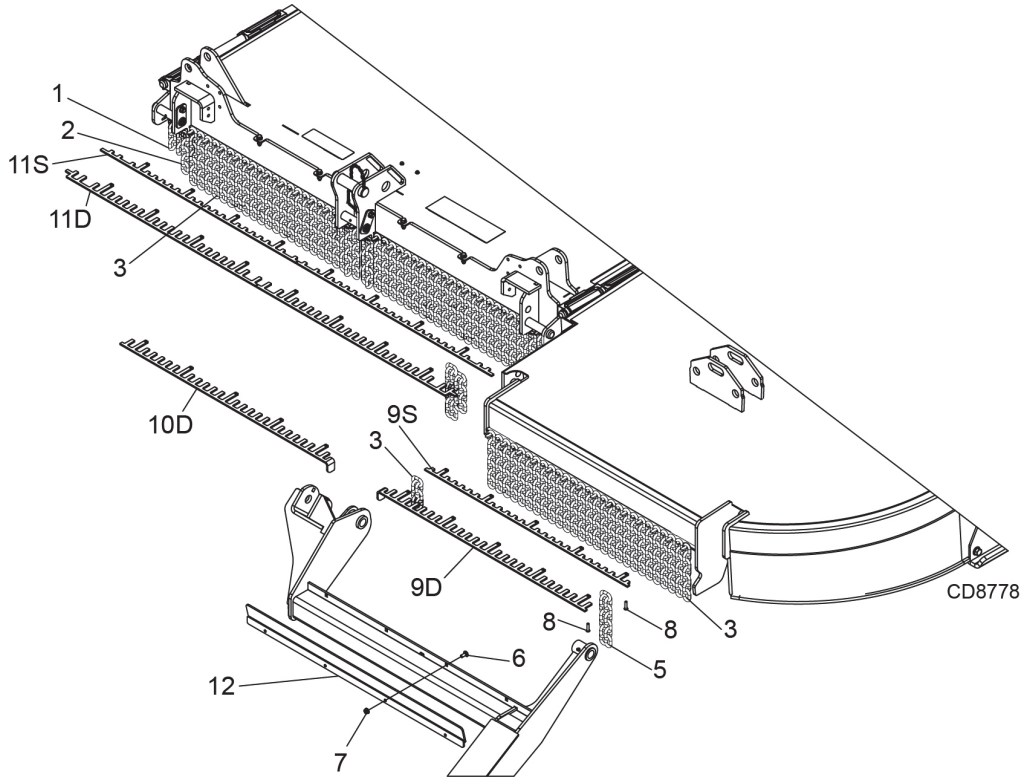
REF	PART	QTY	DESCRIPTION
1	16148	24	Bolt, carriage 5/16 NC x 3/4 ZP
2	24409	16	Bolt, carriage 5/16 NC x 1 ZP
3	31407	16	Hydraulic hose tie 7" LG
4	71632	4	Bolt whiz hex .312 - 18 x 1
5	602688	4	Reflector, amber, w/ hole, round, 60 mm
6	602689	2	Reflector, white, w/ hole, round, 60 mm
7	602850	6	Screw, slotted, cheese, M5 x 0.8 x 16
8	602851	6	Nut, hex, nylock, M5 x 0.8
9	603912	1	Light, CE RT, triangle
10	603913	1	Light, CE LT, triangle
11	1044974	2	Link, rear stop RT
13	1045655	40	Nut, HFN 5/16 NC, Dri-Loc patch
14	1046026	2	WA, CE rear mount
15	1046028	2	WA, CE front mount
16	1046030	2	Link, CE front
17	1046032	1	Link, CE RT, rear
18	1040633	1	Link, CE LT, rear
19	1046034	2	Link, RR support
20	1046051	1	Angle, CE cross
21	1046054	2	Placard, CE, RT
22	1046055	2	Placard, CE, LT
23	1046097	1	Harness, CE light

PLACARD AND LIGHT MOUNTS
AFTER SERIAL NUMBER 10007668087004

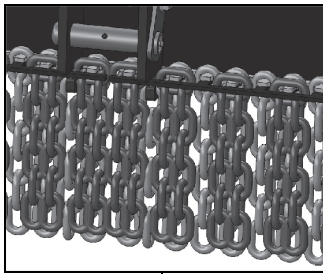


REF	PART	QTY	DESCRIPTION
1	16148	8	Bolt, carriage 5/16 NC x 3/4 ZP
2	24409	16	Bolt, carriage 5/16 NC x 1 ZP
3	31407	16	Hydraulic hose tie 7" Lg
4	71632	12	Bolt whiz hex .312 - 18 x 1
5	602688	4	Reflector, amber, w/ hole, round, 60 mm
6	602689	2	Reflector, white, w/ hole, round, 60 mm
7	602850	6	Screw, slotted, cheese, M5 x 0.8
8	602851	6	Nut, hex, nylock, M5 x 0.8 x 16
9	603912	1	Light, CE RT, triangle
10	603913	1	Light, CE LT, triangle
11	614114	1	Asy, RT RR placard
12	614115	1	Asy, LT RR placard
13	614118	1	Asy, RT FRT placard
14	614119	1	Asy, LT FRT placard
15	614124RP	2	WA, rear mount CE
16	614128RP	2	Link, strap rear mount CE
17	1045655	32	Nut, HFN 5/16 NC, Dri-Loc patch
18	1046028RP	2	WA, CE front mount
19	1046097	1	Harness, CE light

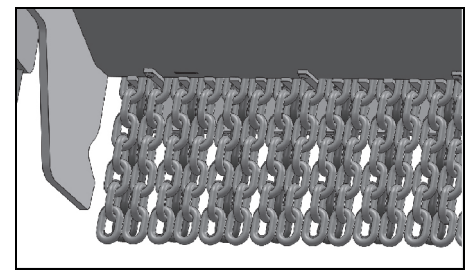
CHAIN SHIELDING - CENTRE & WING (REAR)
SINGLE ROW STANDARD ON BW10.50E AND BW15.50E MODELS
DOUBLE ROW OPTIONAL ON BW10.50E AND BW15.50E MODELS



Rear Centre Installed

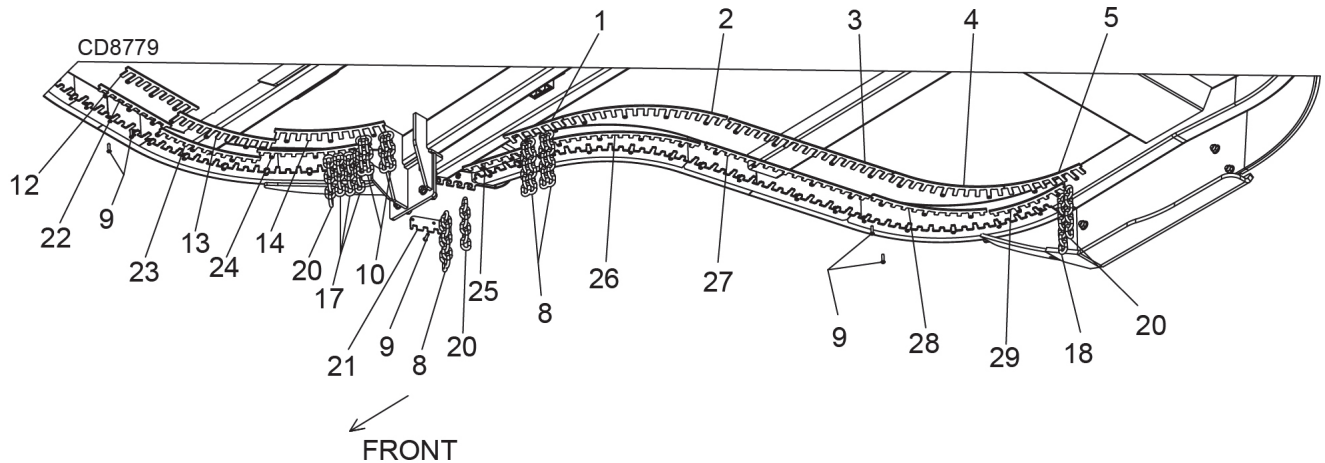


Rear Wing Installed

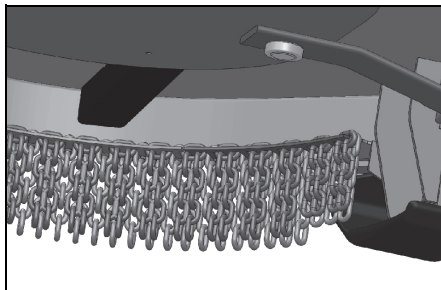


REF	PART	DESCRIPTION	QTY	
			SINGLE	DOUBLE
1	4069	Chain, 4 link 5/16	-	4
2	3994	Chain, 5 link 5/16	-	4
3	5496	Chain, 7 link 5/16	2	96
4	38381	Chain, 9 link 5/16	2	-
5	1016952	Chain, link 13 5/16	50	-
6	16148	Bolt, carriage 5/16 NC x 3/4 ZP	8	-
7	1045655	Nut, HFN 5/16 NC, Dri-Loc patch	8	-
8	1041087	Screw, button head 1/4 NC x 1.0, patch	18	18
9S	1044833RP	Link, chain, wing, RR	-	2
9D	1045677RP	Link, chain, wing, RR, DBL, RT	1	-
10D	603895RP	Link, chain, wing, RR, DBL, LT	1	-
11S	1044855RP	Link, chain, CTR, RR	-	2
11D	1045678RP	Link, chain, CTR, RR, DBL	2	-
12	603898RP	WA, rear DBL chain flap	2	-

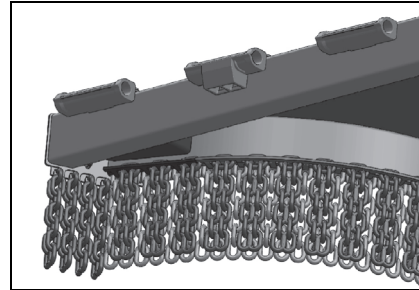
CHAIN SHIELDING - CENTRE & WING (FRONT)
SINGLE ROW STANDARD ON BW10.50E AND BW15.50E MODELS
DOUBLE ROW OPTIONAL ON BW10.50E AND BW15.50E MODELS



**Front Centre
Installed**



**Wing
Installed**



SINGLE ROW

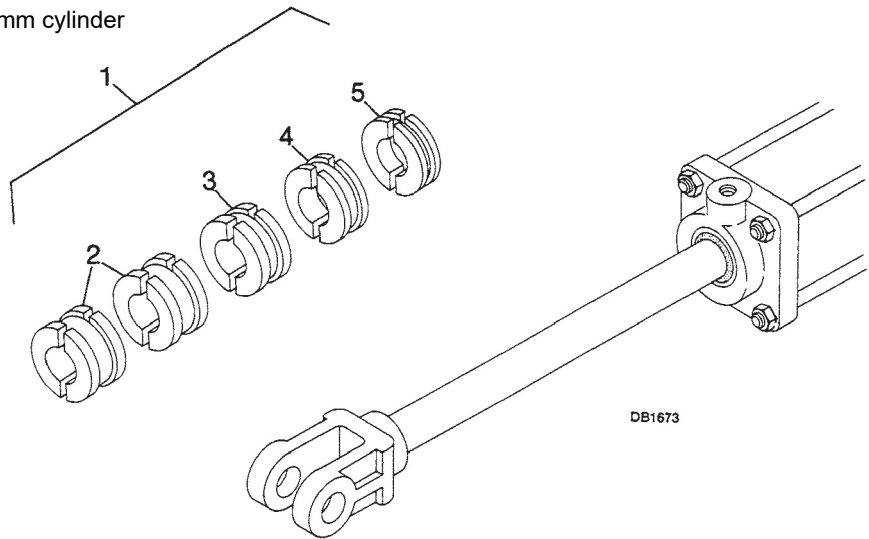
REF	PART	QTY	DESCRIPTION
9	1041087	70	1/4 NC x 1.0 button head screw
16	4069	4	5/16 chain - 4 link
17	3994	4	5/16 chain - 5 link
18	5496	112	5/16 chain - 7 link
20	5498	59	5/16 chain - 6 link
21	1044996RP	2	Inner winglet retainer
22	1044858RP	1	Front centre retainer
23	1044859RP	2	Front centre inner radius retainer
24	1045827RP	2	Front centre outer radius retainer
25	1044861RP	2	Straight winglet retainer
26	1045075RP	2	Curved winglet retainer
27	1045039RP	2	Front wing straight chain retainer
28	1044839RP	2	Front wing radius chain retainer
29	1045074RP	2	Front wing outer chain retainer

DOUBLE ROW

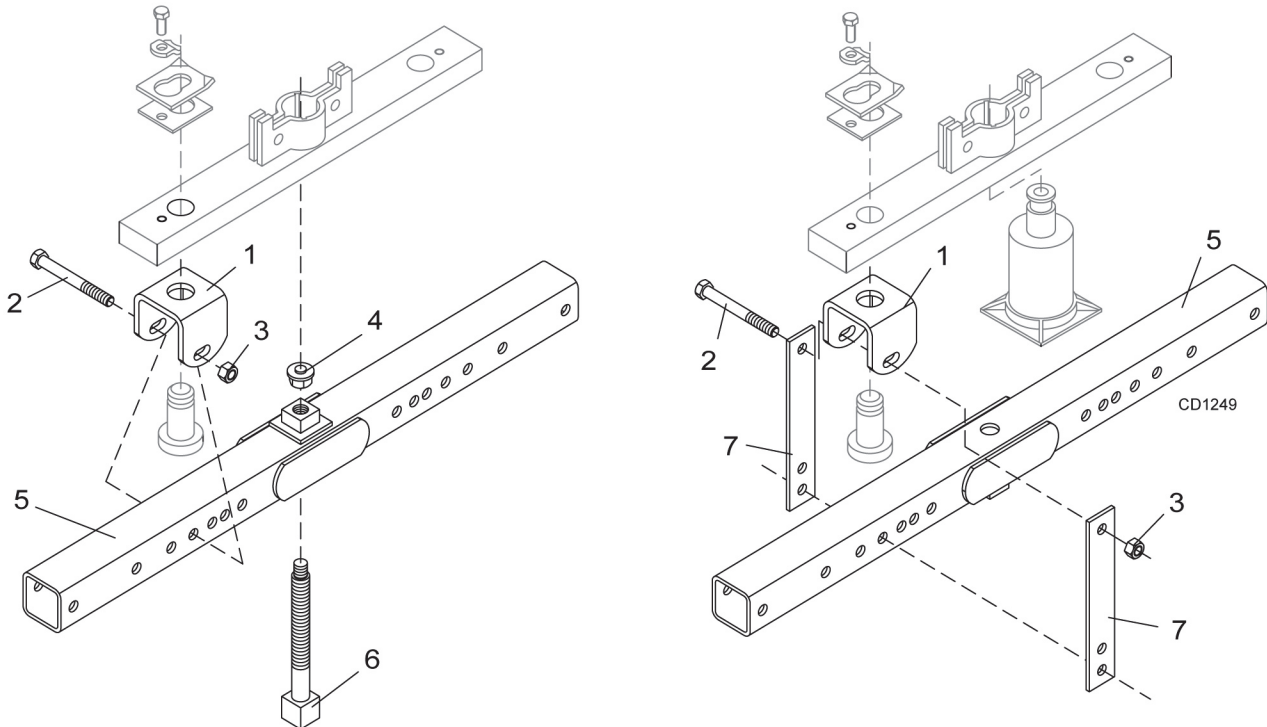
REF	PART	QTY	DESCRIPTION
1	1045681RP	2	Straight winglet DBL retainer
2	1045685RP	2	Curved winglet DBL retainer
3	1045683RP	2	Front wing straight DBL chain retainer
4	1045682RP	2	Front wing radius DBL chain retainer
5	1045684RP	2	Front wing outer DBL chain retainer
7	1016953	25	5/16 chain - 11 link
8	1016952	114	5/16 chain - 13 link
10	38381	6	5/16 chain - 9 link
12	1045679RP	1	Front centre DBL retainer
13	1045680RP	2	Front centre inner radius DBL retainer
14	1045838RP	2	Front centre outer radius DBL retainer

HYDRAULIC CYLINDER STROKE CONTROL KIT

REF	PART	QTY	DESCRIPTION
1	24098A	1	Stroke control set for 32 mm cylinder rod (contains items 2 - 5)
2	----	2	38 mm segment
3	----	1	32 mm segment
4	----	1	25 mm segment
5	----	1	19 mm segment



CROSSBAR PULLER (OPTIONAL)

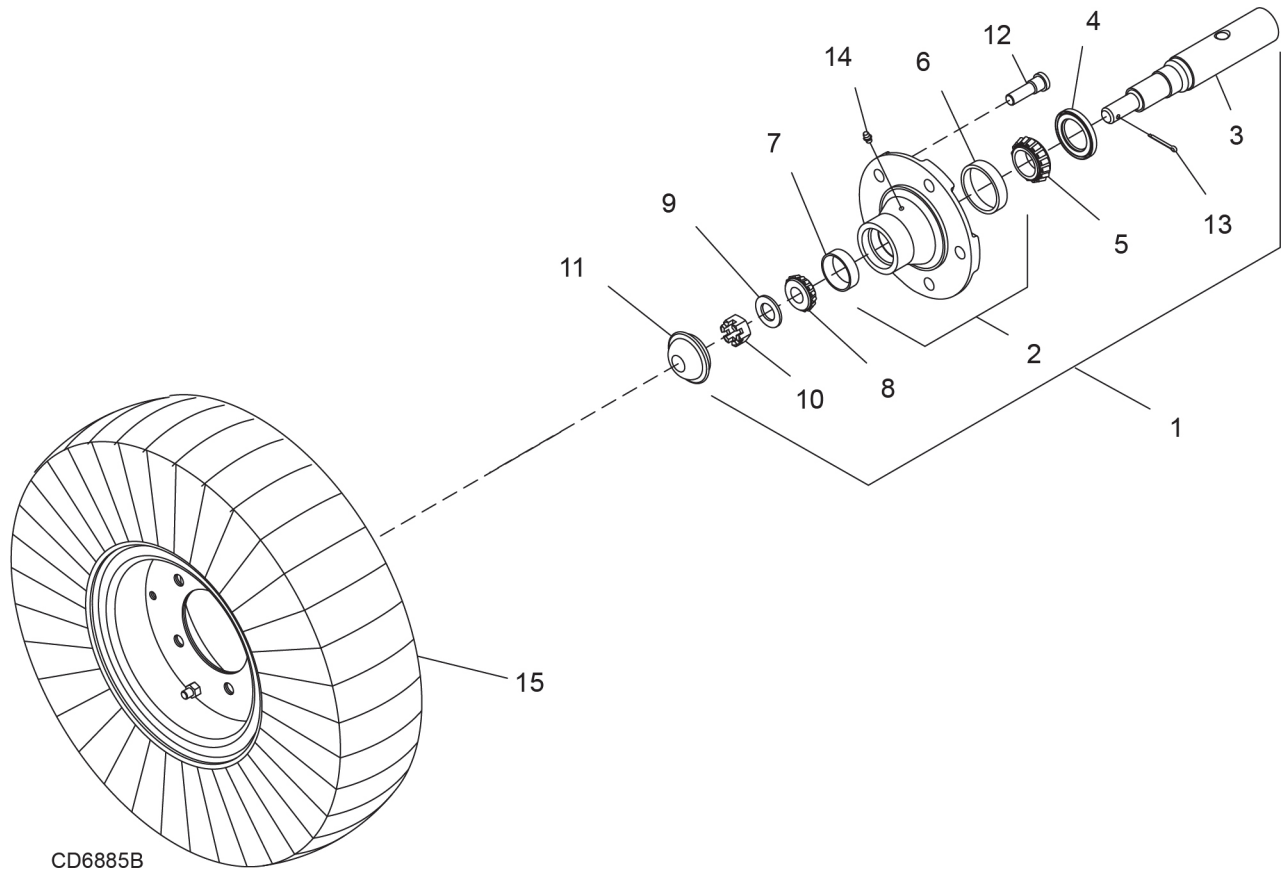


REF	PART	QTY	DESCRIPTION
A	8811	1	Crossbar puller, complete
1	19914	2	Crossbar puller clevis
2	3097 *	4	5/8 NC x 4-1/2 HHCS GR5
3	230 *	4	5/8 NC hex nut

REF	PART	QTY	DESCRIPTION
4	24879	1	Crossbar puller pad assembly
5	24876	1	Crossbar puller tube assembly
6	24881	1	Crossbar puller screw assembly
7	24885	4	Crossbar puller link

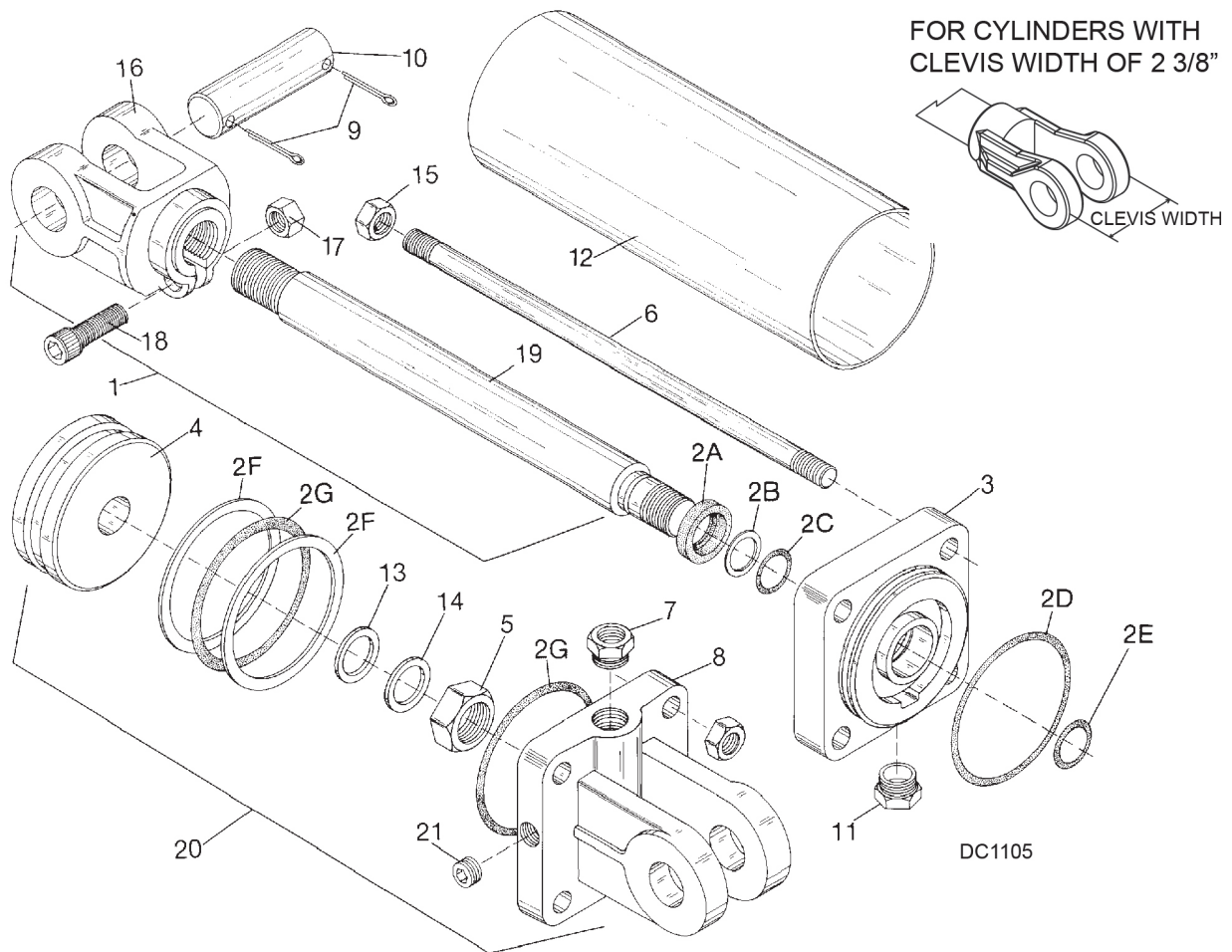
* Standard hardware - obtain locally

5-BOLT WHEEL & TIRE ASSEMBLY



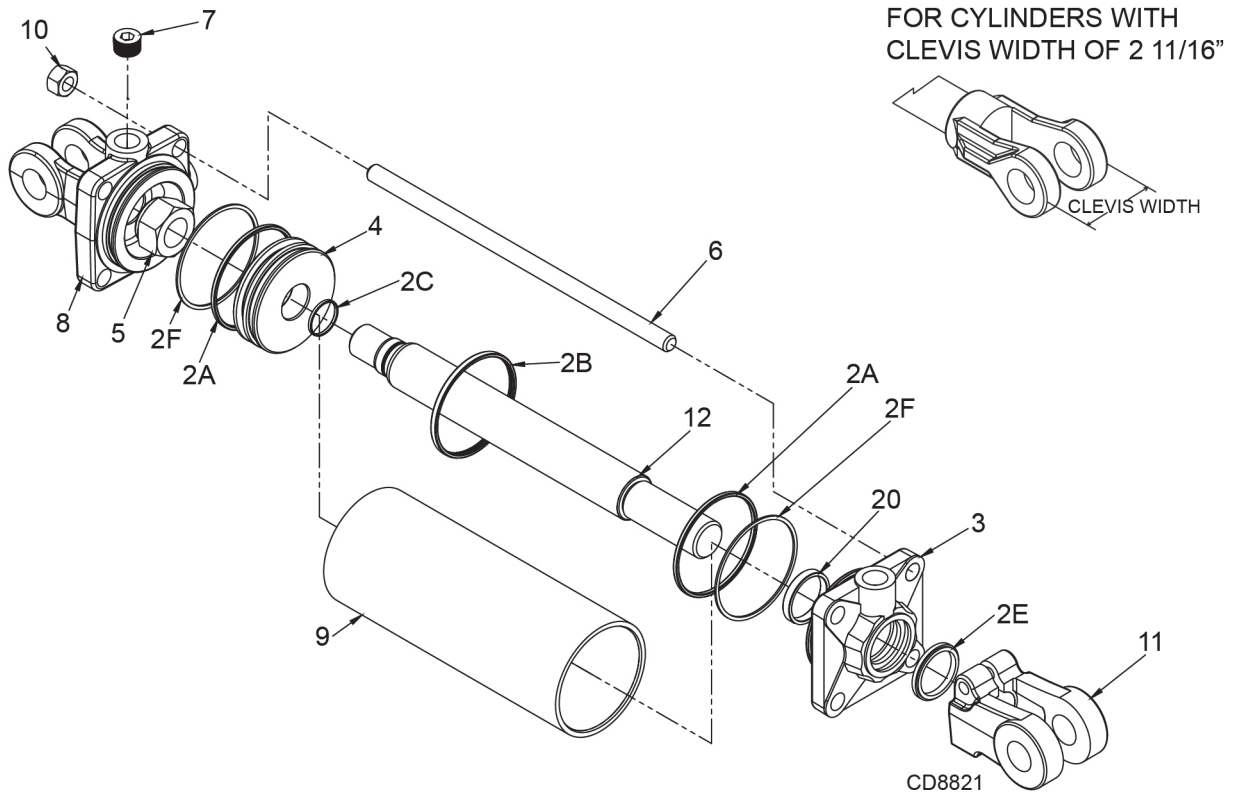
REF	PART	QTY	DESCRIPTION
1	1017050	1	Heavy hub assembly (includes items 1 through 15)
2	1017034	1	Heavy wheel hub with cups (includes items 6,7,14)
3	1017033	1	Axle
4	1017027	1	Seal
5	1017028	1	Bearing cone
6	1017036	1	Bearing cup
7	1017037	1	Bearing cup
8	1017029	1	Bearing cone
9	1017031	1	Washer
10	1017032	1	Castle nut
11	1017035	1	Hub cap
12	1017038	5	Stud
13	1017069	1	Cotter pin
14	1017067	1	Grease fitting
15		1	Tire & wheel asy - contact dealer for replacement

HYDRAULIC CYLINDERS



REF	Centre 3.5 x 8 PART	QTY	DESCRIPTION	REF	Centre 3.5 x 8 PART	QTY	DESCRIPTION
2	23540	1	Seal repair kit (includes 2A - 2G)	9	923*	4	1/4 x 1-3/4 cotter pin
2	-----	1	Seal repair kit w/ heavy duty piston seal (includes 2A - 2G)	10	1631	2	1 x 3-5/8 clevis pin
2A	‡	1	Wiper seal	11	-----	1	1/2 x 1/4 pipe reducer bushing -OR-
2C	‡	2	1-1/4 ID u-cup	11	11975	1	1/2 NPT vent plug
2D	‡	2	Barrel o-ring	12	NS	1	Cylinder barrel
2E	†		Rod static o-ring	15	*	8	Tie rod nut
2F	‡	2	Piston back-up washer	16	23549	1	Hydraulic cylinder rod clevis
2G	‡	1	Pistol seal o-ring	17	6698*	1	3/8 NC lock nut
3	23543	1	Rod end housing	18	-----*	1	3/8 NC x 1-1/2 socket head cap screw
4	23544	1	Piston	19	23551	1	Hydraulic cylinder rod
5	25496	1	Jam nut	20	-----	1	3 x 10 hydraulic cylinder - wing
6	NS	4	Cylinder tie rid	20	10475	1	3-1/2 x 8 hydraulic cylinder w/ breather complete
7	-----	1	1/2 pipe plug -OR-				* Obtain locally
7	11893*	1	1/2 x 1/4 pipe reducer bushing				† Not used on this cylinder
8	NS	1	Cylinder butt end				‡ Included in seal kit
							NS Not sold separately

HYDRAULIC CYLINDERS



3.0X1.25Ø ROD

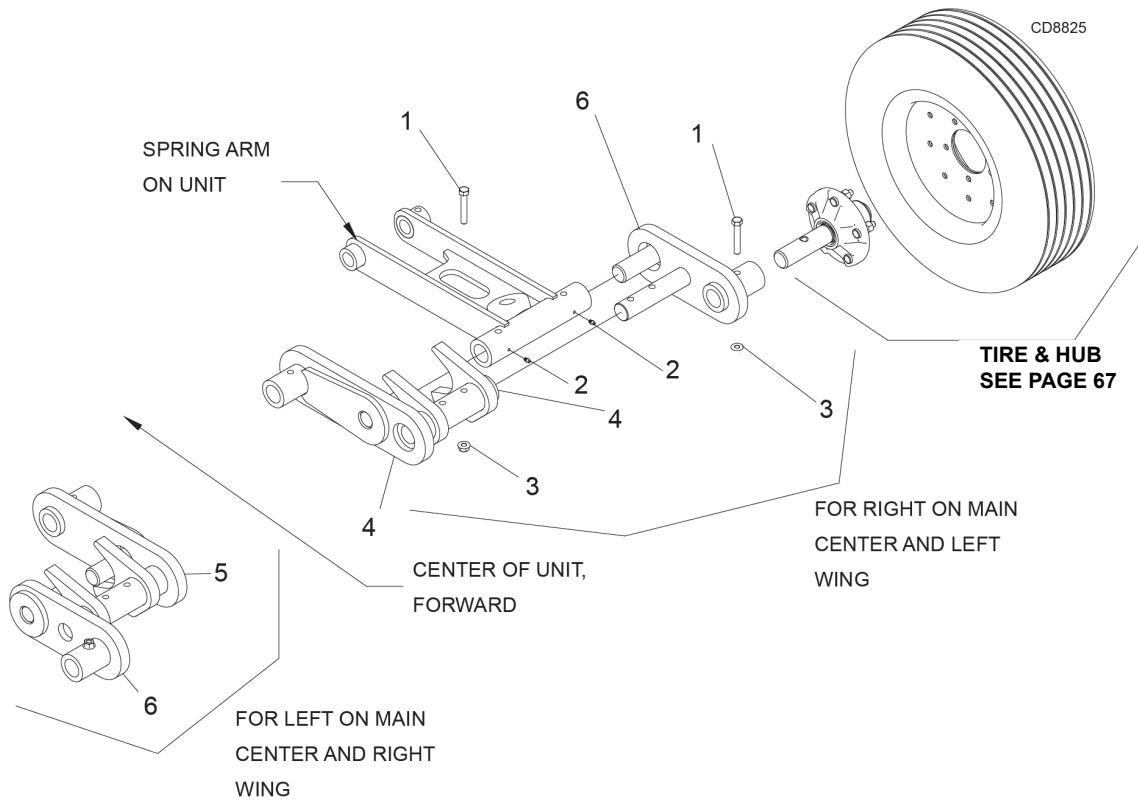
REF	PART	QTY	DESCRIPTION
1	597269		Complete cylinder
2	600251	1	Seal kit (includes items 2A-2F)
2A	†	2	Cap o-ring
2B	†	1	Piston seal
2C	†	1	Rod o-ring
2D	†	1	Cap seal
2E	†	1	Wiper seal
2F	†	2	Backup seal
3	N/S	1	Cylinder housing rod end
4	N/S	1	Piston
5	N/S	1	Jam nut
6	N/S	4	Cylinder tie rod
7	*	3	1/2 pipe plug
8	N/S	1	Cylinder housing butt end
9	N/S	1	Cylinder barrel
10	N/S	8	Tie rod nut
11	N/S	1	Cylinder clevis
12	N/S	1	Cylinder rod

† Included in seal kit

* Standard hardware, obtain locally

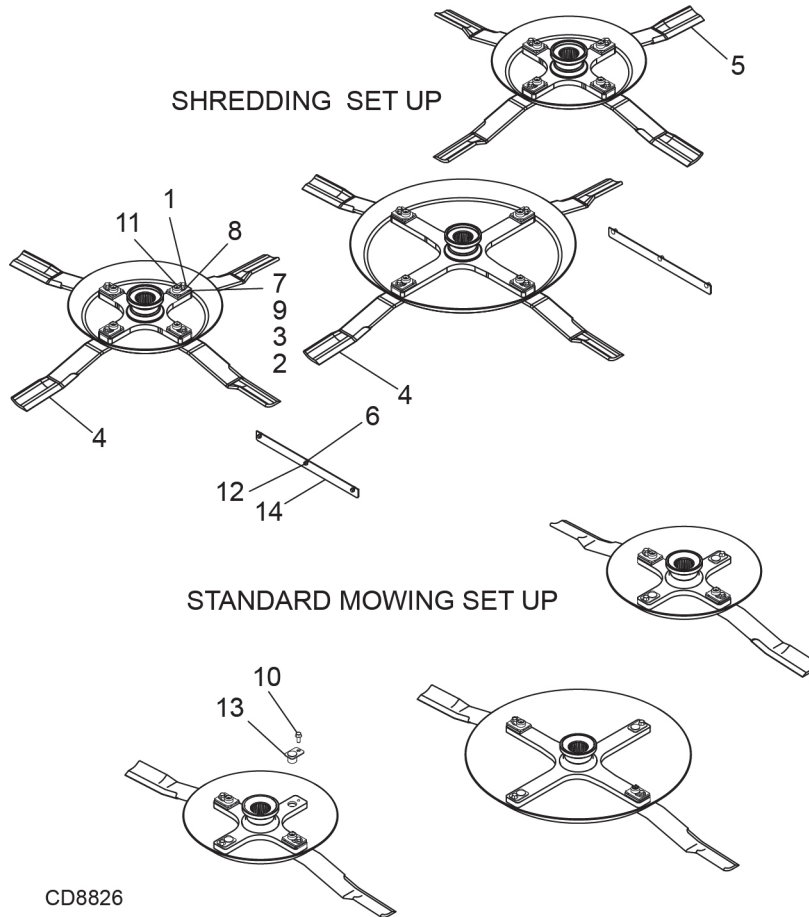
N/S Not serviced

**TANDEM AXLE (OPTIONAL)
FOR .60 & .70 SERIES MODELS ONLY**



REF	PART	QTY	DESCRIPTION
1	3489	8	HHCS 1/2 NC X 3 GR5 ZP
2	1043432	8	Zerk, 1/4 drive type
3	1045624	8	Nut, HFN 1/2 NC, Dri-Loc patch
4	1045738RP	1	WA, tandem arm, RT
5	1045739RP	1	WA, tandem arm, LT
6	1045850RP	2	WA, tandem arm

**SHRED KIT (OPTIONAL)
FOR .60 & .70 SERIES MODELS ONLY**



CD8826

REF	PART	QTY	DESCRIPTION
1	3379	6	HHCS 1/2 NC x 1-1/2 GR5 ZP
2	10520RP	6	18GA 1-1/2 blade pin shim
3	13946RP	6	20 GA 1-1/2 blade pin shim
4	19160KTRP	4	Blade kit CCW
5	19161KT	2	Blade kit CW
6	24597	6	Bolt CRG 3/8 NC x 3/4
7	32603RP	6	Keyhole plate special
8	32604RP	6	Blade pin lock clip spec
9	1028824RP	6	Spacer, 5/16 thick blade pin
10	1031225	6	HFS .50NC x 1.25 GR5
11	1045034RP	6	Pin, blade, DRL, 2.39
12	1045628	6	Nut, HFN 3/8 NC, Dri-Loc patch
13	1045820	6	WA, pin 1.50 x 1.13
14	1045884	2	Lug, shred baffle
15	19162KT	3	BLD, .50 x 4 x 25 flat double edge blade kit, optional for low horsepower shredding

BOLT TORQUE CHART

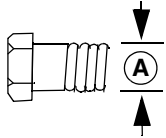
Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

Fasteners must always be replaced with the same grade as specified in the manual parts list.

Always use the proper tool for tightening hardware: SAE for SAE hardware and Metric for metric hardware.

Make sure fastener threads are clean and you start thread engagement properly.

All torque values are given to specifications used on hardware defined by SAE J1701 MAR 99 & J1701M JUL 96.



SAE SERIES TORQUE CHART



SAE Grade 2
(No Dashes)

SAE Bolt Head Identification

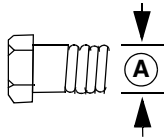


SAE Grade 5
(3 Radial Dashes)



SAE Grade 8
(6 Radial Dashes)

Ⓐ Diameter (Inches)	Wrench Size	MARKING ON HEAD					
		SAE 2		SAE 5		SAE 8	
		lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m
1/4"	7/16"	6	8	10	13	14	18
5/16"	1/2"	12	17	19	26	27	37
3/8"	9/16"	23	31	35	47	49	67
7/16"	5/8"	36	48	55	75	78	106
1/2"	3/4"	55	75	85	115	120	163
9/16"	13/16"	78	106	121	164	171	232
5/8"	15/16"	110	149	170	230	240	325
3/4"	1-1/8"	192	261	297	403	420	569
7/8"	1-5/16"	306	416	474	642	669	907
1"	1-1/2"	467	634	722	979	1020	1383



METRIC SERIES TORQUE CHART



Metric
Grade 8.8

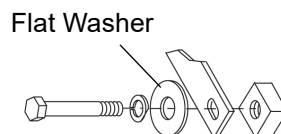
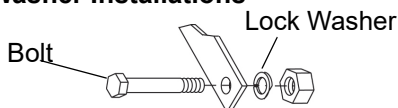
Metric Bolt Head Identification



Metric
Grade 10.9

Ⓐ Diameter & Thread Pitch (Millimeters)	Wrench Size	COARSE THREAD				FINE THREAD				Ⓐ Diameter & Thread Pitch (Millimeters)
		MARKING ON HEAD				MARKING ON HEAD				
		Metric 8.8		Metric 10.9		Metric 8.8		Metric 10.9		
		N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	
6 x 1.0	10 mm	8	6	11	8	8	6	11	8	6 x 1.0
8 x 1.25	13 mm	20	15	27	20	21	16	29	22	8 x 1.0
10 x 1.5	16 mm	39	29	54	40	41	30	57	42	10 x 1.25
12 x 1.75	18 mm	68	50	94	70	75	55	103	76	12 x 1.25
14 x 2.0	21 mm	109	80	151	111	118	87	163	120	14 x 1.5
16 x 2.0	24 mm	169	125	234	173	181	133	250	184	16 x 1.5
18 x 2.5	27 mm	234	172	323	239	263	194	363	268	18 x 1.5
20 x 2.5	30 mm	330	244	457	337	367	270	507	374	20 x 1.5
22 x 2.5	34 mm	451	332	623	460	495	365	684	505	22 x 1.5
24 x 3.0	36 mm	571	421	790	583	623	459	861	635	24 x 2.0
30 x 3.0	46 mm	1175	867	1626	1199	1258	928	1740	1283	30 x 2.0

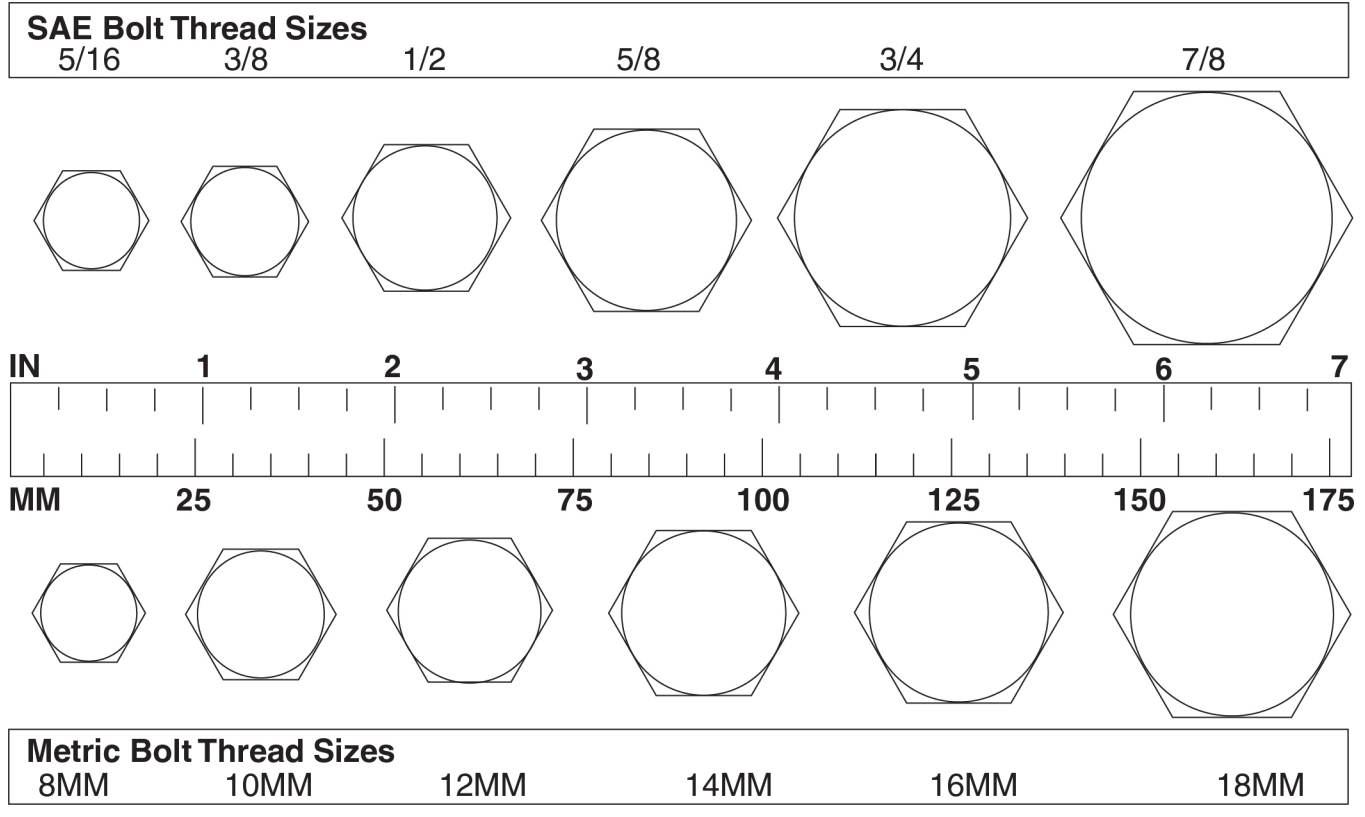
Typical Washer Installations



8/9/00

BOLT SIZE CHART

NOTE: Chart shows bolt thread sizes and corresponding head (wrench) sizes for standard SAE and metric bolts.



ABBREVIATIONS

AG Agriculture	MPa..... Mega Pascal
ASABE..... American Society of Agricultural & Biological Engineers (formerly ASAE)	N..... Newton
ASAE American Society of Agricultural Engineers	NC National Coarse
ATF Automatic Transmission Fluid	NF National Fine
BSPP British Standard Pipe Parallel	NPSM..... National Pipe Straight Mechanical
BSPTM British Standard Pipe Tapered Male	NPT National Pipe Tapered
CV..... Constant Velocity	NPT SWF National Pipe Tapered Swivel Female
CCW Counter-Clockwise	ORBM O-Ring Boss - Male
CW..... Clockwise	P..... Pitch
F Female	PBY Power-Beyond
FT Full Thread	psi..... Pounds per Square Inch
GA..... Gauge	PTO..... Power Take Off
GR (5, etc.) Grade (5, etc.)	QD..... Quick Disconnect
HHCS Hex Head Cap Screw	RH..... Right Hand
HT..... Heat-Treated	ROPS Roll-Over Protective Structure
JIC Joint Industry Council 37° Degree Flare	RPM Revolutions Per Minute
LH..... Left Hand	RT..... Right
LT..... Left	SAE Society of Automotive Engineers
m..... Meter	UNC Unified Coarse
mm..... Millimeter	UNF Unified Fine
M..... Male	UNS..... Unified Special

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WARRANTY

Please Enter Information Below and Save for Future Reference.

Date Purchased: _____ From (Dealer): _____

Model Number: _____ Serial Number: _____

Woods Equipment Company ("WOODS") warrants this product to be free from defect in material and workmanship. Except as otherwise set forth below, the duration of this Warranty shall be for TWELVE (12) MONTHS COMMENCING ON THE DATE OF DELIVERY OF THE PRODUCT TO THE ORIGINAL PURCHASER.

The warranty periods for specific parts or conditions are listed below:

Part or Condition Warranted	Model Number	Duration (from date of delivery to the original purchaser)
	All units invoiced after 4/30/2012	
Gearbox components	BB48XE, BB60XE, BB72XE, BB84XE, BB600XE, BB720XE, BB840XE, BB48.30E, BB60.30E, BB72.30E, BB84.40E, BB60.50E, BB72.50E, BB84.50E, BB60.60E, BB72.60E, BB84.60E, DS8.30E, DS10.40E	6 years
	BW10.50E BW10.50QE, BW15.50E BW15.50QE, BW10.60E, BW10.60QE, BW15.60E, BW15.60QE, BW10.70E, BW10.70QE, BW15.70E, BW15.70QE, BW240XHDE, BW240XHDQE, BW20.50QE, BW20.60QE, BW20.70QE, BW20.51QE, BW20.61QE, BW20.71QE	
	RD990XE, PRD6000E, PRD7200E, PRD8400E	
	RDC54E, RD60E, RD72E, RC3.5E, RC4E, RC5E, RC6E	3 years (1 year if used in rental or commercial applications)
Blade spindles	RD990XE, PRD6000E, PRD7200E, PRD8400E	3 years

Under no circumstances will this Warranty apply in the event that the product, in the good faith opinion of WOODS, has been subjected to improper operation, improper maintenance, misuse, or an accident. This Warranty does not apply in the event that the product has been materially modified or repaired by someone other than WOODS, a WOODS authorized dealer or distributor, and/or a WOODS authorized service center. This Warranty does not cover normal wear or tear, or normal maintenance items. This Warranty also does not cover repairs made with parts other than those obtainable through WOODS.

This Warranty is extended solely to the original purchaser of the product. Should the original purchaser sell or otherwise transfer this product to a third party, this Warranty does not transfer to the third party purchaser in any way. There are no third party beneficiaries of this Warranty.

WOODS makes no warranty, express or implied, with respect to engines, batteries, tires or other parts or accessories not manufactured by WOODS. Warranties for these items, if any, are provided separately by their respective manufacturers.

WOODS' obligation under this Warranty is limited to, at WOODS' option, the repair or replacement, free of charge, of the product if WOODS, in its sole discretion, deems it to be defective or in noncompliance with this Warranty. **The product must be returned to WOODS with proof of purchase within thirty (30) days after such defect or noncompliance is discovered or should have been discovered, routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid.** WOODS shall complete such repair or replacement within a reasonable time after WOODS receives the product. **THERE ARE NO OTHER REMEDIES UNDER THIS WARRANTY. THE REMEDY OF REPAIR OR REPLACEMENT IS THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY.**

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This Warranty is subject to any existing conditions of supply which may directly affect WOODS' ability to obtain materials or manufacture replacement parts.

No agent, representative, dealer, distributor, serviceperson, salesperson, or employee of any company, including without limitation, WOODS, its authorized dealers, distributors, and service centers, is authorized to alter, modify, or enlarge this Warranty. Answers to any questions regarding warranty service and locations may be obtained by contacting:

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2606 South Illinois Route 2
Post Office Box 1000
Oregon, Illinois 61061 USA

800-319-6637 tel
800-399-6637 fax
woodsequipment.com

BLOUNT EUROPE SA

Rue Emile Francqui 5
1435 MONT-SAINT-GUIBERT
Belgium

+32 10 301111 tel
woodsequipment.eu

ALITEC™
CENTRAL FABRICATORS®
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WARRANTY

(Replacement Parts For All Models Except Zero-Turn Mowers)

Woods Equipment Company (“WOODS”) warrants this product to be free from defect in material and workmanship for a period of ninety (90) days from the date of delivery of the product to the original purchaser with the exception of V-belts, which will be free of defect in material and workmanship for a period of 12 months.

Under no circumstances will this Warranty apply in the event that the product, in the good faith opinion of WOODS, has been subjected to improper operation, improper maintenance, misuse, or an accident. This Warranty does not cover normal wear or tear, or normal maintenance items.

This Warranty is extended solely to the original purchaser of the product. Should the original purchaser sell or otherwise transfer this product to a third party, this Warranty does not transfer to the third party purchaser in any way. There are no third party beneficiaries of this Warranty.

WOODS’ obligation under this Warranty is limited to, at WOODS’ option, the repair or replacement, free of charge, of the product if WOODS, in its sole discretion, deems it to be defective or in noncompliance with this Warranty. **The product must be returned to WOODS with proof of purchase within thirty (30) days after such defect or noncompliance is discovered or should have been discovered, routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid.** WOODS shall complete such repair or replacement within a reasonable time after WOODS receives the product. THERE ARE NO OTHER REMEDIES UNDER THIS WARRANTY. THE REMEDY OF REPAIR OR REPLACEMENT IS THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY.

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